

INTEGRATED CONTEXT ANALYSIS (ICA)

PAKISTAN

October 2026

PAKISTAN National Disaster Management Authority NDMA

WFP World Food Programme

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LIST OF ACRONYMS

3PA	Three-pronged Approach
AA	Anticipatory Action
AJ&K	Azad Jammu & Kashmir
AVHRR	Advanced Very High-resolution Radiometer
CBPP	Community based Participatory planning
CFSLA	Comprehensive Food Security and Livelihoods Assessment
CoHD	Cost of Healthy Diet
CONOPS	Concept of Operations
DEOC	District Emergency Operation Center
DEM	Digital Elevation Model
DRR	Disaster Risk Reduction
ESA CCI	European Space Agency's Climate Change Initiative
EW	Early Warning
FAO	Food and Agriculture Organization United Nations
FIES	Food Insecurity Experience Scale
FSLA	Food Security and Livelihoods Assessment
GB	Gilgit Baltistan
GCISC	Global Climate Change Impact Studies Center
GLOF	Glacial Lake Outburst Floods (GLOF)
HIES	Household Integrated Economic survey
ICA	Integrated Context Analysis
KP	Khyber Pakhtunkhwa
LDN	Land Degradation Neutrality
MAM	Moderate Acute Malnutrition
MICS	Multiple Indicator Cluster Survey
MPI	Multi-dimensional Poverty Index
NDMA	National Disaster Management Authority
NDVI	Normalised Difference Vegetation Index
NEOC	National Emergency Operations Center
NNS	National Nutrition Survey
PBS	Pakistan Bureau of Statistics
PDMA	Provincial Disaster Management Authority
PMD	Pakistan Meteorological Department
PSLM	Pakistan Social & Living Standards Measurement
SLP	Seasonal Livelihood Planning
Tmax	Maximum Temperature
UNCCD	United Nations Convention to Combat Desertification
VAM	Vulnerability Analysis & Mapping
WFP	World Food Programme

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FOREWORD



The publication of Integrated Context Analysis (ICA), developed in collaboration with the World Food Programme, represents a significant step toward strengthening Pakistan's capacity to better understand and address the complex interplay between disaster risk and food insecurity.

Pakistan stands at a critical juncture. The increasing frequency and intensity of floods, droughts, and heatwaves are no longer isolated events, they are systemic risks that directly threaten our food systems, livelihoods, and national stability. The Integrated Context Analysis represents a paradigm shift; by combining food security indicators with spatial patterns of natural hazards. It enables us to move beyond reactive disaster response towards proactive risk management, guiding targeted interventions, optimizing resource allocation, and strengthening institutional preparedness at all levels.

Our ambition is clear: to build a food secure, climate resilient Pakistan where no community remains vulnerable to the cascading impacts of natural shocks and food insecurity. Through tools like ICA, we are laying the foundation for risk informed spatial planning, climate smart agriculture, and anticipatory action frameworks that protect both lives and livelihoods. We envision a future where early warning systems are seamlessly linked with early action, where data drives decisions, and where resilience is embedded in every sector from agriculture to water management and beyond.

The National Disaster Management Authority is committed to leading this transformation in close partnership with national stakeholders and international organizations such as the World Food Programme. Together, we will scale innovative solutions, strengthen institutional capacities, and ensure that the most vulnerable populations are at the center of our efforts. This publication is not just a technical resource; it is a call to action. It underscores our determination to shift from managing disasters to managing risks, from vulnerability to resilience, and from food insecurity to sustainable food systems.

I commend all partners and experts who have contributed to this important work and reaffirm our unwavering commitment to a safer, stronger, and food-secure Pakistan.

Lieutenant General Inam Haider Malik

Chairman, National Disaster Management Authority (NDMA), Pakistan

PREFACE



Pakistan faces a complex and evolving landscape shaped by food insecurity, climate-induced shocks, and deep-rooted socioeconomic vulnerabilities. As the impacts of extreme weather events, economic pressures, and structural inequalities intensify, the need for robust, evidence-based planning has never been greater. The World Food Programme (WFP), in partnership with the Government of Pakistan and national and provincial institutions, remains committed to supporting targeted, risk-informed, and resilience-focused interventions across the country.

The Integrated Context Analysis (ICA) is a cornerstone of this commitment. Using national data and long-term trends, the ICA identifies areas where food insecurity and natural hazards overlap and helps determine the most appropriate response – from disaster risk reduction and emergency preparedness, to resilience building and social protection.

Pakistan's first ICA, completed in 2017, established a critical foundation for integrated and forward-looking planning. Building on this precedent, the 2026 ICA reflects a transformed risk landscape. With Pakistan ranked among the top ten countries globally in the Climate Risk Index, it considers the expanding scope and intensity of natural hazards, including floods, droughts, heatwaves, smog, glacial lake outburst floods (GLOFs), and fires.

The ICA will support decision-making for various actors, including the Government and humanitarian and development partners, to strengthen disaster risk reduction and mitigation planning, as well as resource allocation to the most vulnerable districts.

This ICA is the outcome of a highly collaborative and consultative process, jointly led by the National Disaster Management Authority (NDMA) and WFP, with contributions from federal ministries, provincial departments, research organizations, and institutions. A Technical Committee guided the analytical process.

I extend my sincere appreciation to NDMA for its leadership, to all government stakeholders for their technical inputs, and to the Vulnerability Analysis and Mapping (VAM) Unit of WFP Pakistan for steering the analysis with analytical excellence.

As Pakistan continues its journey toward greater food security and climate resilience, the insights generated through this ICA will play a vital role in shaping policies, programmes, and partnerships that leave no one behind.

Ms. Anita Hirsch

Representative and Country Director, World Food Programme (WFP), Pakistan





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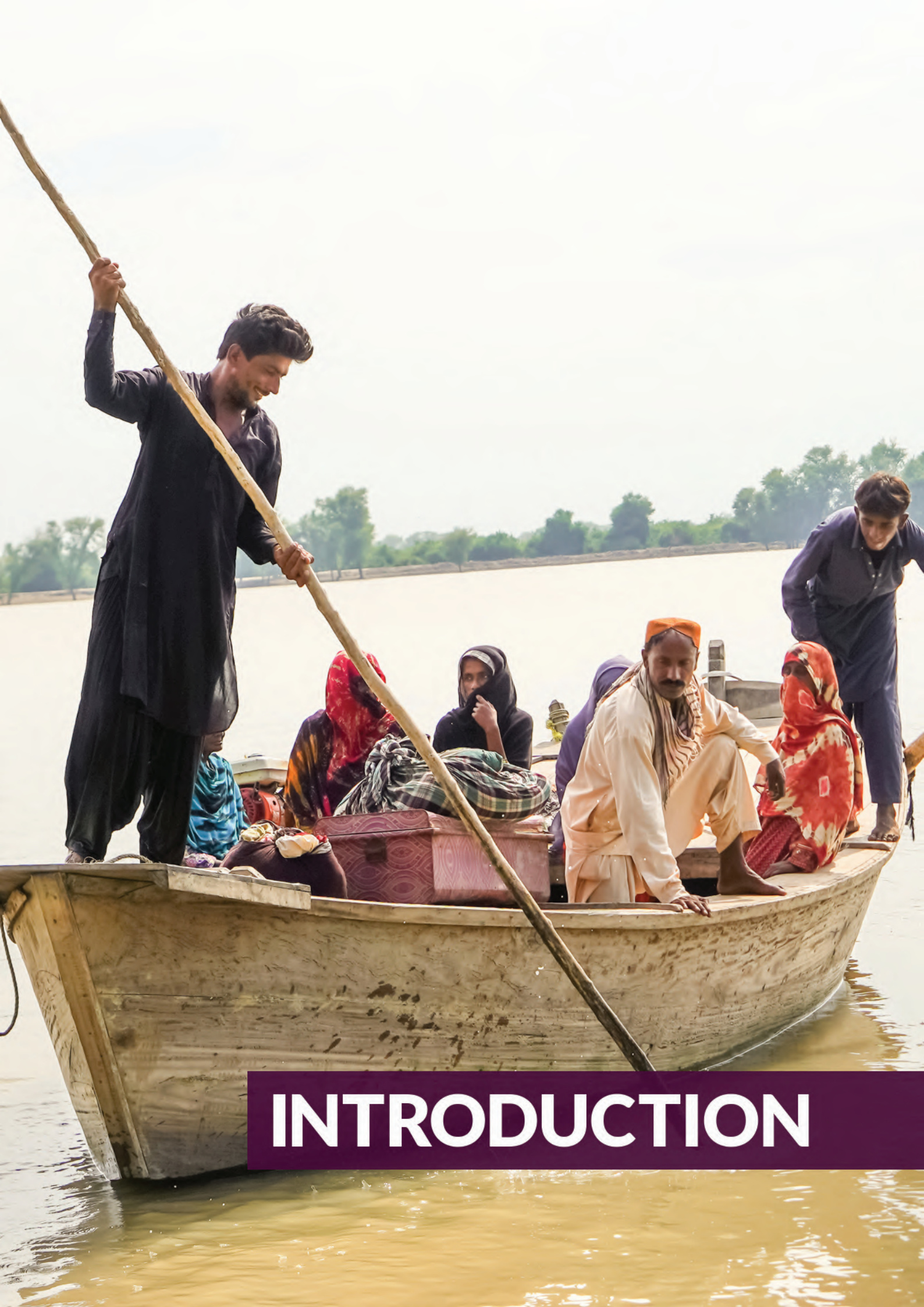
We particularly acknowledge with gratitude, the leadership of Brig. Badar Zaman (ex-Director General, NEOC, NDMA) and Ms. Zahra Hassan, Executive Director, NDMA, whose directions as Technical Lead guided the Integrated Context Analysis (ICA) 2026 throughout its design and delivery. The analysis further benefited from the authorship and technical coordination of Ms. Mehwish Ali and Mr. Iftikhar Abbas, from WFP, whose sustained engagement and joint leadership with NDMA ensured methodological rigor and timely completion.

From the Pakistan Bureau of Statistics, we greatly acknowledge the contributions of Ms. Rabia Awan, Deputy Director General, and Dr. Naveed Iqbal, Joint Agriculture Census Commissioner, for providing data access and statistical guidance of several important national datasets. From the Pakistan Meteorological Department, we thank Dr. Dildar Hussain Kazmi, Deputy Director NAMC, and Mr. Ayaz and from the Food and Agriculture Organization of the United Nations, we recognize the support from Mr. Nauman ul Haq and Mr. Waqas Karim. From the Global Climate Change Impact Studies Centre, we highly appreciate the inputs of Ms. Nuzba Shaheen on climate risk analytics, heatwave analysis and provision of land degradation data. From the Pakistan Agricultural Research Center, we thank Ms. Sajida Taj for agriculture and livelihoods insights. From SUPARCO, we are grateful to Mr. Obaid-ur-Rehman and Dr. Abubakar Zia from Land Information Management System, for agronomy related parameters and interpretations.

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NDMA and WFP extend its thanks to all individuals, institutions and experts for their continued commitment to evidence based planning in support of food security, resilience and disaster risk reduction across Pakistan.



INTRODUCTION



1. Introduction

The Integrated Context Analysis (ICA) is an analytical process used to identify the most appropriate programmatic strategies for specific geographical areas based on the overlap between recurrence of food insecurity and occurrence of natural shocks. It supports strategic, evidence-based decision making by engaging multiple stakeholders at national and regional levels to discuss and map suitable interventions, including resilience building, disaster risk reduction, preparedness and social protection. The process facilitates collaboration among WFP, national disaster management authorities, governments, and humanitarian partners[1].

The ICA combines multi-year food security trends with natural shock risk data to categorize and prioritize sub-national areas (districts) for different programme strategies. Food security analysis helps identify districts where recurrent or chronic food insecurity requires safety nets and long-term social protection measures, as well as districts where shocks related disruptions necessitates recovery and resilience focused interventions.

Climate-related natural shock risk mapping complements this analysis by highlighting locations where disaster risk reduction, preparedness and early warning systems can strengthen food-security outcomes and reduce vulnerability to future shocks. In addition, the ICA can integrate additional datasets related to nutrition, education, agriculture, livelihoods and resilience, to support thematic and strategic planning.

The ICA is based on principles of historical trend analyses across a number of technical and sectoral disciplines, the findings of which

1 A WFP approach to operationalise resilience Part 1: Integrated Context Analysis accessible at https://alnap.org/help-library/resources/a-wfp-approach-to-operationalise-resilience-part-one-integrated-context-analysis/

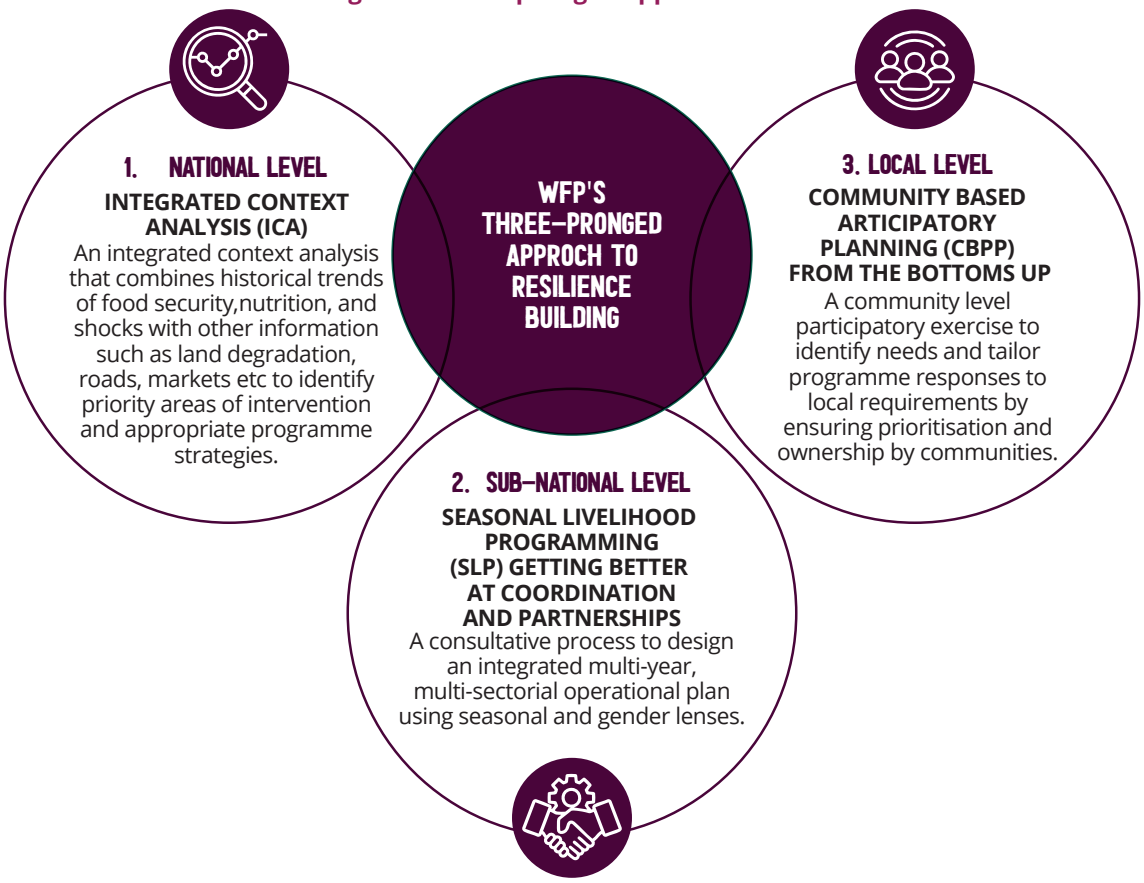
are overlaid to identify areas of overlap. Trend analyses provide an understanding of what has happened in the past and what may (or may not) be changing over time, serving as a proxy for what may occur in the future, and informing where short, medium, and longer-term programming efforts are most required. The analysis is based on two core dimensions: trends of food insecurity and main natural shocks risk. By combining these dimensions, the ICA identifies geographic areas that require different types of interventions and programmatic responses.

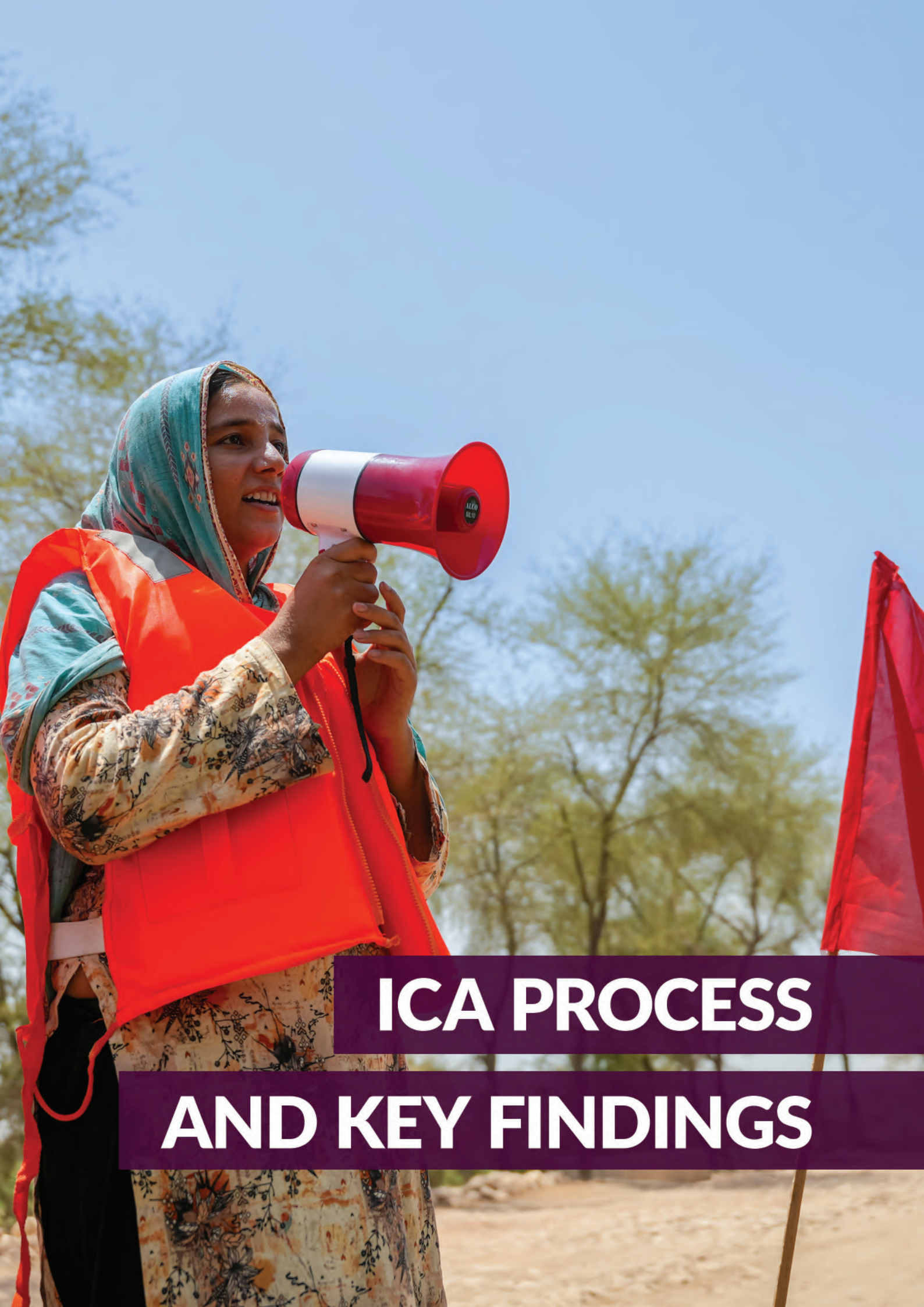
Within the Three-Pronged Approach (3PA), ICA is the first of three tools that inform the integrated programming. The 3PA comprises of a) a national level, data-driven context analysis (the ICA) that identifies and maps broad programme strategies by combining food insecurity trends with natural shock risks; b) at sub-national level, Seasonal Livelihood Programming (SLP) to create seasonal livelihood calendars that capture common practices, shocks and stressors to inform specific activities and interventions; and c) at community level, Community-Based Participatory Planning (CBPP) with specific communities and local authorities to help refine local development plans.

The objective of the ICA is to perform, through spatial analysis techniques, a geographical identification of areas with different levels of persistent food insecurity, and different levels of natural shock risks, to determine different priority areas; and contribute to the guiding, targeting and programming of short-term, medium-term and long-term interventions.

The outputs of the ICA process include identification of areas where to position different programme themes (e.g. early warning, Preparedness, Productive and Protective Safety Nets, and DRR) and their different combinations and footprints tailored to different parts of the country.

Figure 1: Three-pronged approach of ICA





ICA PROCESS AND KEY FINDINGS

2. ICA Process and Key Findings

The first ICA for Pakistan was completed in 2017 by the World Food Programme (WFP) Pakistan under the leadership of National Disaster Management Authority (NDMA) and in close collaboration with the other key Ministries and Technical Institutions including; the Ministry of Planning, Ministry of Climate Change, Ministry of National Food Security and Research, Pakistan Agriculture Research Council, Pakistan Bureau of Statistics, Pakistan Meteorological Department, SUPARCO, PDMAs, FAO and WFP HQ for technical support.

The analysis final report available at:

Integrated Context Analysis (ICA): On Vulnerability to Food Insecurity and Natural Hazards - Pakistan, 2017 - Pakistan | ReliefWeb[2]

The revision of the Integrated Context Analysis (ICA) commenced in 2025 and was completed in February 2026, under the joint leadership of the National Disaster Management Authority (NDMA) and the World Food Programme (WFP) Pakistan, in close collaboration with relevant federal ministries, provincial line departments, and technical partners.

The analysis classifies and colourcodes districts across Pakistan based on their exposure to high, medium, or low levels of food insecurity and/or natural hazards during the period 2018–2024. This analytical framework provides critical evidence to inform strategic discussions on where and for how long interventions such as preparedness, disaster risk reduction, social protection, and market access initiatives should be prioritized to effectively address the needs of the most vulnerable and foodinsecure populations.

2.1 Objectives

The ICA in Pakistan ***primarily aims*** to:

a) Identify and rank geographical areas by the level of risk to food insecurity and exposure to natural hazards through integrated spatial techniques and long-term trend analysis of core dimensions (food security, natural hazards,) and core lenses (land degradation, nutrition, seasonality and livelihoods, other relevant stressors if data is available).

b) Provide information to more effectively inform the programming, targeting and decision making for relevant medium-term and long-term food security interventions, especially resilience building and disaster risk reduction programs.

c) Provide a set of relevant products and materials for advocacy, capacity development and future replication to update this analysis or carry out similar analyses.

2.2 Rationale for Revision of ICA

Considering that Pakistan is ranked among the top 10 countries in the Global Climate Risk Index 2025 (German watch)[3] and periodically faces extreme events such as overlapping floods and below-normal rainfall in many parts of the country, along with other frequent but localized hazards including GLOFs there was a need to look at the changing landscape of natural hazards. Therefore, NDMA has recently revised the natural hazards indices for most of the hazards including flood, drought, earthquake, landslides, GLOF and have established a few additional hazards indices like heatwaves, Smog and forest fire etc. Also, updated food insecurity data available from Pakistan Social and Living Standards Measurement Survey Report 2019-2020 and from the IPC data for the targeted districts. Therefore, there was a need and opportunity to update and revise the national ICA analysis. The analysis used the latest hazard risk scores of floods, droughts, heatwaves, smog and GLOF and overlaid them with relevant national datasets on updated food security data, national or global datasets (if national

2 (NDMA and WFP Pakistan, 2017)

3 (Lina Adil, 2025)

data is not available) on land cover, out of school children etc. using WFP standardized ICA methodology and approach to ensure proper application of analytical techniques, adequate internal and external consultations with relevant WFP units and food security partners to produce sound evidence-based products for more effectively guiding the programming.

Findings from the ICA exercise will be used by WFP for early warning, food security monitoring and climate resilience programming. It's use for other UN agencies is around district prioritization and programme planning.

Additionally, the Government of Pakistan will also benefit from the revised analyses for improving disaster risk reduction and mitigation measures in the most vulnerable districts and strengthening their planning and response practices.

Geographical Scope

The analysis is conducted at district level because most of the national datasets on hazard scores and food insecurity indicators are available at district level.

2.3 Process

At the outset of the exercise, a wider stakeholder consultation was organized in Islamabad on 28 October 2024, and all the key national and provincial stakeholders were engaged to discuss and agree on expectations and priorities of the ICA. Subsequently, a Technical Committee was formed jointly led by WFP and NDMA and comprising of the technical members from respective organizations. The composition of the Technical Committee is on page ii at the start of the report.

Between January 2025 and March 2026, seven meetings of the Technical Committee were convened in order to discuss various aspects of food security analyses, data gaps and recommendations.

The preliminary results of ICA analysis agreed by the Technical Committee were then presented to the Chairman NDMA for endorsement. The endorsement of findings by the Chairman NDMA was received on 11 February 2026. Subsequent to this, the findings were also shared with provincial PDMAs in April 2026.

Table 1: Overview of ICA categories

CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4	CATEGORY 5
Longer-term programming to address conditions of protracted crises and frequent natural shocks that impede recovery, aiming to improve food security, reduce risk and build resilience to natural shocks and other stressors.	Programming to address seasonal food insecurity and/or to support post-shock recovery, aiming to reduce risk and build resilience to natural shocks and other stressors.	Longer-term programming to address conditions of long-term (chronic) food insecurity likely due to non-climatic causes (e.g., pervasive poverty, protracted conflict, etc.) aiming to improve food security and build resilience to man-made shocks and stressors.	Programming that strengthens early warning and preparedness (considering land degradation trends) to reduce risk and build resilience to natural shocks and other stressors.	Programming that strengthens preparedness to reduce risk and build resilience to natural shocks and other stressors.

2.4 Summary of Key Findings

The analysis categorizes the districts into five Categories and nine Areas based on their levels of recurring food insecurity and exposure to natural shocks, as described below.

- The analysis of the food security data showed that approximately 24% of Pakistan's population experienced food insecurity at least once between 2018 and 2024. The food insecurity rate is highest in Balochistan (36%), followed by Sindh (28%), Khyber Pakhtunkhwa (21%), Punjab (21%), AJ&K (20%), and GB (17%).
- The analysis assigns each district a specific ICA category between 1 to 5 based on recurrence of food insecurity coupled with natural hazards, which helps to identify districts where broad programmatic activities such as year-round safety nets, direct and indirect nutrition interventions, climate resilience, early warning and disaster preparedness are required.
- Overall, 31 districts fall under Category 1 where households have experienced high recurrence of food insecurity and medium to high levels of natural hazard (flood, drought). This includes ten districts from Balochistan, six from Punjab, seven from Sindh, four each from KP and AJ&K. Reference figure 2, each colour corresponds to one of five **ICA Categories**.
- Table 2 below describes what the colours mean in terms of the food insecurity and natural shock levels that the people living in those districts likely to experience on a regular or recurring basis.

Figure 2: ICA categories (Map)

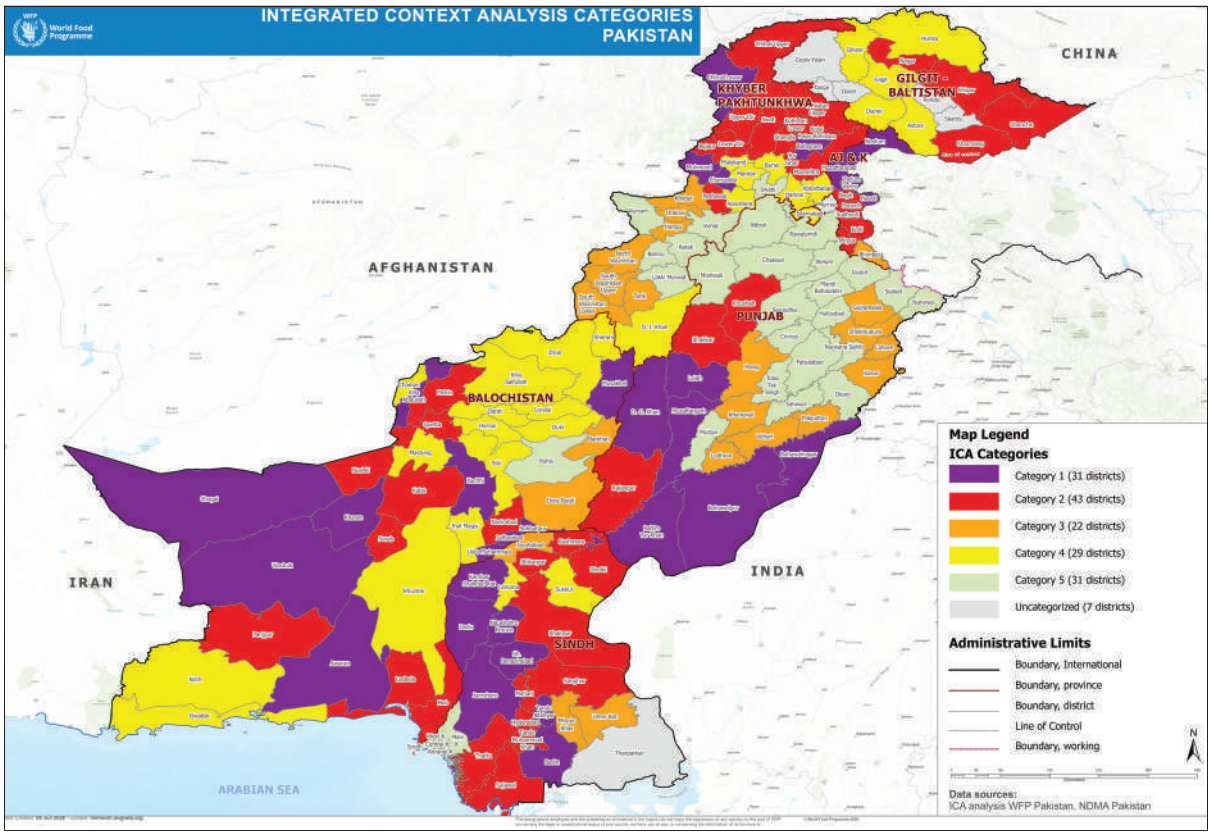


Table 2: Summary of ICA findings

Districts in category 1 are primarily concentrated in southern Punjab, western Sindh, western Balochistan, northern AJ&K and KP. These are characterised by high recurrence of food insecurity coupled with high and medium natural hazards.
Category 2 for programmes related to seasonal safety nets and post shock recovery. Districts in category 2 are scattered throughout the country where recurrence of food insecurity is moderate and where natural shock hazards are high or medium.
Category 3, which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty. These are characterized by high and moderate recurrence of food insecurity with relatively low natural hazards. These districts are concentrated in central Punjab and central parts of KP.
Category 4, which suggests strengthening of early warning and preparedness measures. These are characterized by low recurrence of food insecurity with medium and high natural hazards Districts in this category are mainly from northern and central parts of Balochistan, few parts in KP, Punjab and GB.
Category 5, where there is a focus to build effective early warning systems to trigger disaster preparedness measures. These are characterized by low recurrence of food insecurity and low natural hazards Districts in category 5 are mainly located in northern Punjab, and bordering parts of KP including Kohat, Karak, Swabi and Lakki Marwat in KP and Kohlu in Balochistan.

The analysis also provides **estimates of the number of people experiencing food insecurity** during shocks observed over the reference period 2018–2024, supporting preparedness planning and the design of appropriate response interventions.

The long-term planning estimates reflect the proportion of the population that was either consistently food insecure or experienced food insecurity at least once due to specific shocks or crisis events during the reference period. The analysis finds that approximately 24 percent of the population remained food insecure over the long term between 2018 and 2024.

Within this timeline, around 16 percent of population were consistently food insecure regardless of favourable or unfavourable seasonal or production conditions, therefore **chronically food-insecure**.

The analysis also estimates that approximately 6 percent of the population could **be additionally vulnerable to food insecurity** in case of a medium level natural hazard/shock.

Together, these planning estimates provide an indication of the number of people likely to require humanitarian or resilience-oriented assistance under different scenarios. The Integrated Context Analysis (ICA) summarizes these rounded planning estimates as follows:

Table 3: Planning estimates for number of food insecure

LONG-TERM PLANNING	MOST VULNERABLE	PREPAREDNESS PLANNING
Average number of food insecure people	Chronically food insecure	Additional food insecure in case of a shock
57.3 M	**38.2 M**	**19.1 M**

Note: These are planning estimates. Actual numbers should be derived from emergency assessments in the event of a crisis and plans adjusted throughout the programming cycle based on assessment findings.

Findings from the ICA also highlight opportunities for policy level dialogue as follows:

Table 4: Policy recommendations

Sector / Topic	Recommendation	Supporting ICA evidence
Strengthen Monitoring Systems	▪ Regularly track food and nutrition security led by the government in districts facing high levels of food insecurity and acute or chronic malnutrition, using a systems strengthening approach, robust surveillance mechanisms and disaggregated data to identify and prioritize vulnerable populations. ▪ Given the complex, multi-dimensional nature of food insecurity and malnutrition, government bodies, UN agencies, INGOs, and other partners must closely coordinate and jointly design, implement, and monitor integrated food security and nutrition programs.	Districts under Area 1A, 1B, 2A,2B,3A,3B **(Figure 41-43)**
Social Protection Coverage	▪ Broaden the reach by including food insecurity, nutrition and climate change related indicators in the dynamic NSER to identify the vulnerable population in the high risk districts. Social protection programs such as BISP to ensure inclusion of the most vulnerable populations, particularly those living in high food-insecure areas and exposed to recurrent natural hazards like floods and droughts. ▪ Strengthening outreach and targeting mechanisms will help safeguard households against shocks, reduce vulnerability, and build resilience to future crises.	Districts under ICA areas (1A, 1B, 2A, 2B, 3A, 3B) **(Figure 41-45)**
Early warning & DRR	▪ Enhance early warning mechanisms, preparedness planning, and rapid response capacities, ensuring timely communication and coordinated actions by relevant stakeholders/departments and line ministries tominimize impacts on food security and livelihoods. ▪ Introduce crop insurance programs as a key risk-coping strategy, particularly in flood-prone areas, to protect farmers against losses and strengthen their resilience to recurring natural hazards.	Figure 44-45 Combined Hazard Maps **(Annex 6.2)**

2.5 ICA Core Datasets, Dimensions and Lenses

Core Dimensions

Core dimensions refer to the primary datasets used for ICA categorization. These include data on food insecurity and exposure and vulnerability to major natural shocks, which together form the analytical foundation for classifying districts and informing programmatic priority setting.

Food Insecurity

The food insecurity datasets used in this analysis were obtained from secondary sources, and assessed using the Food Insecurity Experience Scale (FIES). FIES is a globally recognized indicator used to measure the severity of food insecurity at the household or individual level. It provides statistically robust estimates of the reference population experiencing food insecurity at different levels of severity.

The indicator is based on eight standardized questions (refer to annex 6.3) refer to the report text that capture people's direct experiences related to limited access to adequate food due to resource constraints over a defined recall period. These questions assess progressively severe conditions, ranging from concerns about food access to reductions in food intake and instances of hunger.

Natural Shocks Risk

Risk scores for vulnerability to key natural hazards, specifically floods, droughts, and earthquakes - are sourced from NEOC, based on data provided by the National Disaster Management Authority (NDMA).

Detailed district wise information on vulnerability to these key shocks is presented in annex 6.2. For each province, the two most relevant shocks were identified based on their prevalence, frequency, and historical impacts., The selection was finalized through a consensus-based process involving relevant stakeholders and members of the Technical Committee, ensuring that the identified shocks accurately reflect the province-specific risk profile.

Core Lenses

Nutrition (Prevalence of Stunting and Wasting): The data on stunting and malnutrition used as a core lens is sourced from fifth and largest nutrition survey of Pakistan i.e. National Nutrition Survey carried out in 2018 under the leadership of Ministry of Health. According to NNS 2018, 40.2% of children under five years of age are stunted while 17.7% suffer from wasting in Pakistan (Government of Pakistan and UNICEF, 2019).

Land Degradation: Assessment of land degradation is based on data published by Ministry of Climate Change and Environmental Coordination, following the standardized methodology of the United Nations Convention to Combat Desertification (UNCCD). This report is produced and published every five years and provides information on trends in land cover and land cover change, the extent and drivers of land degradation processes, and national level estimates for land degradation. The last report of 2022 shows that during the reporting period (2016-2019), significant improvements in land cover status were recorded. The extent of degraded land decreased from 7,020 km² (0.8% of total land area) during the baseline period (2001-2015) to 1,622 km² (0.2%) in the reporting period. At the same time, land productivity improved across 67,270 km² (7.8% of total land area). The overall proportion of degraded land (SDG Indicator 15.3.1) decreased from 7.3% to 3.2% of total land area, representing a reduction of approximately 34,937 km². This positive trend is attributed to large-scale restoration programmes including the Billion Tree Tsunami in Khyber Pakhtunkhwa, mangrove restoration along coastal areas, and various watershed management initiatives (UNCCD, Government of Pakistan, 2022).

Heatwave Ranking: The heatwave vulnerability assessment for Punjab Province was developed by the Global Change Impact Studies Centre (GCISC), using a composite index that integrates frequency, duration, and intensity of heatwave events. The

assessment applies the 90th percentile threshold methodology, whereby a heatwave is defined as a period in which daily maximum temperature (Tmax) exceeds the 90th percentile of the baseline distribution for at least three consecutive days.

The resulting heatwave ranking provides a relative measure of district level vulnerability. A detailed description of the methodology, alongside historical trends and future projections, is provided in Section 4.2.

Additional Lenses

Literacy Rate: District wise data on literacy rates is derived from the results of 7th Population and Housing Census of Pakistan carried out by Pakistan Bureau of Statistics in 2023. According to this, 60% of the total population of the country is literate.

Unemployment Rate: District wise data on unemployment rates was taken from the results of 7th Population and Housing Census of Pakistan carried out by Pakistan Bureau of Statistics in 2023. According to this, 7.8 % of the total population of the country is unemployed.

Out of School Children: District wise data on Out of School children aged 5-16 sourced from the results of 7th Population and Housing Census of Pakistan carried out by Pakistan Bureau of Statistics in 2023. According to this, in total 25.3 million children of age 5-16 are currently out of school.

Distribution of Small Land Holders: Based on FAO and IFAD's reports, a land holding of less than 12.5 acres was considered to be small/ subsistence farmers in Pakistan. Based on this definition, the district wise data on small land holders was taken from Agriculture Census 2024. According to the report of Agriculture Census, there are 10.58 million small farms in the country which is 95% of the total agricultural holdings in the country (Pakistan Bureau of Statistics, 2024).

Cultivated Area: The cultivated area refers to the land actively used for agricultural purposes, including crop production and livestock farming. The total cultivated area of Pakistan was reported to be 52.8 million acres. The district wise data on small land holders in this category is taken from Agriculture Census 2024.

Contextual Lenses

Population: The data for district wise population and population growth rates is sourced from the results of 7th Population and Housing Census of Pakistan, carried out by Pakistan Bureau of Statistics in 2023. According to this, the total population of the country is 241,499,431[4]. The data about spatial distribution of persons per sq km is sourced from WorldPop satellite imagery of 2021.

Land Cover: The data used for the land cover mapping is sourced from 2019/2021 detailed land cover classification undertaken by FAO for the four provinces of Pakistan.

4 (Pakistan Bureau of Statistics, 2023)

Table 5: Summary of essential parameters in ICA

Dimension	Indicator	Source and time span	Threshold
Core Dimensions			
Food Security	FIES (Food Insecurity Experience Scale (FIES)	National Nutrition Survey (NNS) 2018 Pakistan Social and Living Standards Measurement Survey – PSLM (2019-2020) Food security & Livelihood assessment- FAO (2023) Comprehensive Food security & Livelihood Assessment – WFP (2024)	Low: <=20% Medium: 20% to 40% High: >40%
Main Natural Shocks			
Floods	Flood Hazard Index Flash floods Rain induced & riverine floods Glacial Lake Outburst Floods (GLOF)	National Disaster Management Authority (NDMA) 1950-2015	Five levels hazard index reclassified into a 3-point scale (low, medium, high)
Drought	Drought Hazard Index	National Disaster Management Authority (NDMA) 1950-2015	Five levels hazard index reclassified into a 3-point scale (low, medium, high)
Earthquake	Earthquake Hazard Index	National Disaster Management Authority (NDMA) 1950-2015	Five levels hazard index reclassified into a 3-point scale (low, medium, high)
Core Lenses			
Chronic Malnutrition	Prevalence of chronic malnutrition (stunting rate among children under 5 year)	National Nutrition Survey (NNS) 2018	Low <10% Medium 10%-19.9% High 20%-29.9% Very high >=30%
Acute Malnutrition	Prevalence of acute malnutrition (wasting rate among children under 5 years)	National Nutrition Survey (NNS) 2018	Low <5% Medium 5%-9.9% High 10%-14.9% Very high >=15%.

Dimension	Indicator	Source and time span	Threshold
Land Degradation	1) Land cover change (LCC);	Ministry of Climate Change's UNCCD report (Trends. Earth platform, ESA CCI land cover); Baseline: 2001-2015; Reporting: 2016-2019	Degraded land: 3.2% (reporting period) vs 7.3% (baseline); Improved productivity: 67,270 km²; SDG 15.3.1 indicator
Heatwave Punjab and Sindh	heatwave Index	GCISC, MoCC 2025	Tmax >90th percentile baseline; ≥3 consecutive heat wave days; Composite Index: 0.4–0.6 (Moderate), 0.6–0.8 (High), >0.8 (Very High)
Additional Lenses			
Education	Literacy rate (%)	7th Population and Housing Census of Pakistan, PBS 2023	Low <42% Medium 42%-61%
Unemployment	Unemployment rate (%)	7th Population and Housing Census of Pakistan, PBS 2023	High > 17% Medium 10%-17%
Out of School Children	Proportion of Out of School Children (5-16 years)	7th Population and Housing Census of Pakistan, PBS 2023	High > 55% Medium 32%-55%
Small Holder Farmers	Distribution of small land holders	Agriculture Census 2024, PBS	
Area Under Cultivation	District wise area cultivated	Agriculture Census 2024, PBS	
Contextual Lenses			
Population Density and Growth	Persons per square kilometre Number of people in a district Population growth rates (%)	Worldpop data 2021 7th Population and Housing Census of Pakistan, PBS 7th Population and Housing Census of Pakistan, PBS	Population residing in 100 m pixel District level data
Land Cover	Land Cover Class	Land cover mapping for Pakistan by FAO in 2021	



FOOD INSECURITY ANALYSIS

3. Food Insecurity Analysis

3.1 Estimates of Food Insecure Population

3.1.1 Methodology

For estimating the population food insecure in these years, data of FIES indicator from different national surveys was analysed. The food security analysis was carried out using four rounds of FIES/food security data from National Nutrition Survey (NNS), Pakistan Social and Living Standards Measurement survey (PSLM) 2019, Food security and livelihood assessments (FSLA) 2023 and Food security and livelihood assessments (FSLA) 2024 and Comprehensive food security and livelihoods assessments 2024. The data was available for four rounds, and for the last round data was sourced from two FSLAs. Table 6 summarizes the details of surveys and data used.

Table 6: Food insecurity datasets

SURVEY NAME	SOURCE	GEOGRPAHICAL COVERAGE	LIMITATIONS	REMARKS
ROUND 1- 2018 National Nutrition Survey NNS (2018)	Government of Pakistan & UNICEF	4 provinces and AJ&K/GB/ Islamabad	Mostly covered- except for a few new districts	For missing values used data of neighboring districts with similar socio-economic conditions
ROUND 2- 2019 Pakistan Social and Living Standards Measurement Survey – PSLM (2019-2020)	Pakistan Bureau of Statistics (PBS)	4 provinces (district wise) and AJ&K/GB/ Islamabad	Mostly covered- except for a few new districts	For missing values used data of neighboring districts with similar socio-economic conditions
ROUND 3- 2023 Food Security and Livelihood Assessment (FSLA) 2023	FAO	47 districts (Balochistan, KP & Sindh)	Only 47 districts covered	Data gaps were filled using guidance and reference values from the PSLM survey 2020, with missing district-level observations estimated accordingly.
ROUND 4- 2024 Comprehensive Food Security and Livelihood Assessment (CFSLA) & Food Security and Livelihood assessment (FSLA) 2024	WFP, FAO	68 districts (Balochistan, KP & Sindh)	Only 68 Districts covered	Missing district level values were imputed using the average of the first three available rounds, thereby ensuring complete coverage across all districts.

Table 7: Terms used in estimation of food insecure population

ESTIMATE: Long-term planning **HOW IS IT COMPUTED?** Average of all four rounds **INTERPRETATION** It reflects the number of people who were either food insecure or have experienced food insecurity at some point due to a specific shock or event.	**ESTIMATE:** Chronically vulnerable **HOW IS IT COMPUTED?** Average of the two lowest figures **INTERPRETATION** Estimated core group of people who were consistently food insecure regardless of good or bad harvests.	**ESTIMATE:** Additional people Vulnerable (in case of shock) **HOW IS IT COMPUTED?** Overall average minus Average of the two highest figures **INTERPRETATION** Estimated number of additional people at risk, who could fall into crisis in the event of a shock (natural or man-made).

Food insecurity estimates for AJ&K are based on FIES data from NNS 2018 and PSLM 2019-2020 (Pakistan Bureau of Statistics, 2019-2020). Since the ICA framework requires at least three rounds of food insecurity data, and no additional FIES dataset was available for the reference period, hence for the third round Multi-Dimensional Poverty Index (MPI) was utilized as a proxy measure for the third round. This approach was adopted to ensure temporal comparability and maintain consistency in the assessment of chronic food insecurity patterns across districts. Furthermore, the MPI consists of 15 indicators, nine of which have a strong conceptual and empirical relationship with food access and food utilization. These dimensions represent critical drivers of food insecurity in Pakistan, making MPI a suitable proxy indicator for assessing relative food insecurity where direct measurements are unavailable.

Hence for AJ&K and GB, where sufficient rounds of food insecurity data were not available, the latest Multidimensional Poverty Index (MPI) incidence of poverty data was used as a proxy indicator.

The resulting dataset was tabulated to assess trends and identify the range of food insecurity levels over the reference period. For ease of interpretation, the lowest estimated number of food-insecure people is highlighted in yellow, while the highest estimate is highlighted in red.

To support longer-term programme planning, it is essential to estimate the number of people likely to require assistance over time. Accordingly, estimates of the food insecure population from 2018 to 2024, were compiled using the available four rounds of data, including proxy-based estimates where necessary. The resulting dataset were presented in bar graph (Figure 3). The lowest numbers (in yellow) and the highest numbers (in red) are highlighted.

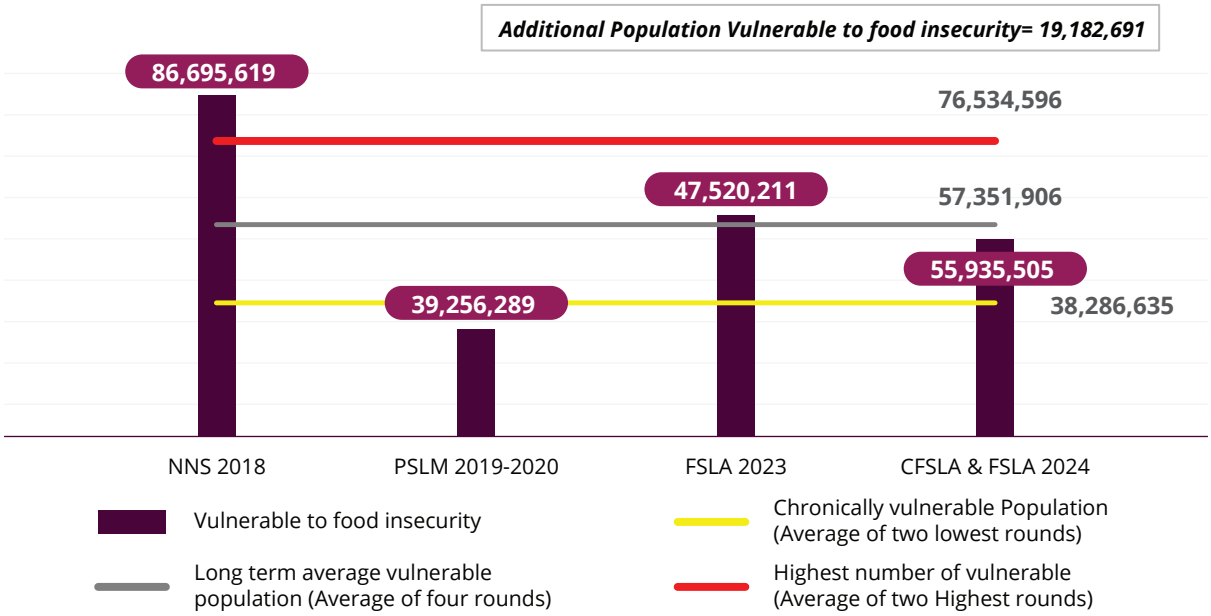
3.1.2 National Summary- Estimates of food insecure population

National level analysis of food security data from the four rounds estimates on average 57 million people (24% of the national population) were food insecure over the five years between 2018-2024. This gives a broad indication of the food insecure population in the country.

Over the recall period, estimated 38 million people (the average of the two lowest figures) were consistently food insecure, irrespective of any improvements of the situation. For planning purposes, this figure can reflect an estimate of those chronically food insecure.

The difference between the averages of the two highest figures recorded over the recall period (76 million people) and the overall average reflects the estimated number of additional people who were food insecure (19 million people) in case food insecurity get worse due to a medium level shock. This number of people can provide a rough figure for preparedness planning in case of a relatively medium fluctuation or deterioration of food insecurity but is not meant as a forecast for a defined period in the future.

Figure 3: Estimated food insecure population - Pakistan



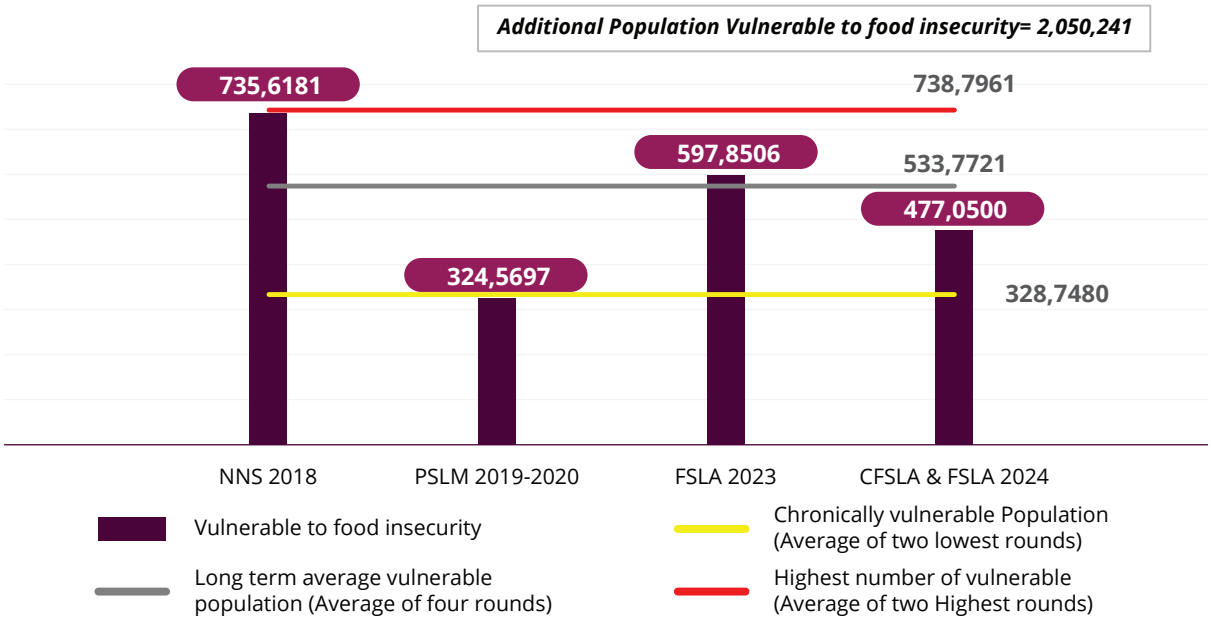
3.1.3 Provincial Summary- Estimates of Food Insecure Population

3.1.3.1 Balochistan

The analysis of food security data from the four rounds shows that around 5.3 million people (36% of Balochistan' total population) were food insecure between 2018-2024 at some point. Between 2018-2024, around 3.3 million people (22%) were chronically food insecure, regardless of any improvements of the situation. Based on historic trends, additional estimated 2 million people (14%) could fall into food insecurity in case of a medium level shock in the province.

For example, the food insecurity jumped from 23% in 2019 to 39% in 2020, marking the sharpest increase, possibly due to socio-economic impacts of COVID-19 (PBS Report 2020).

Figure 4: Estimated food insecure population - Balochistan



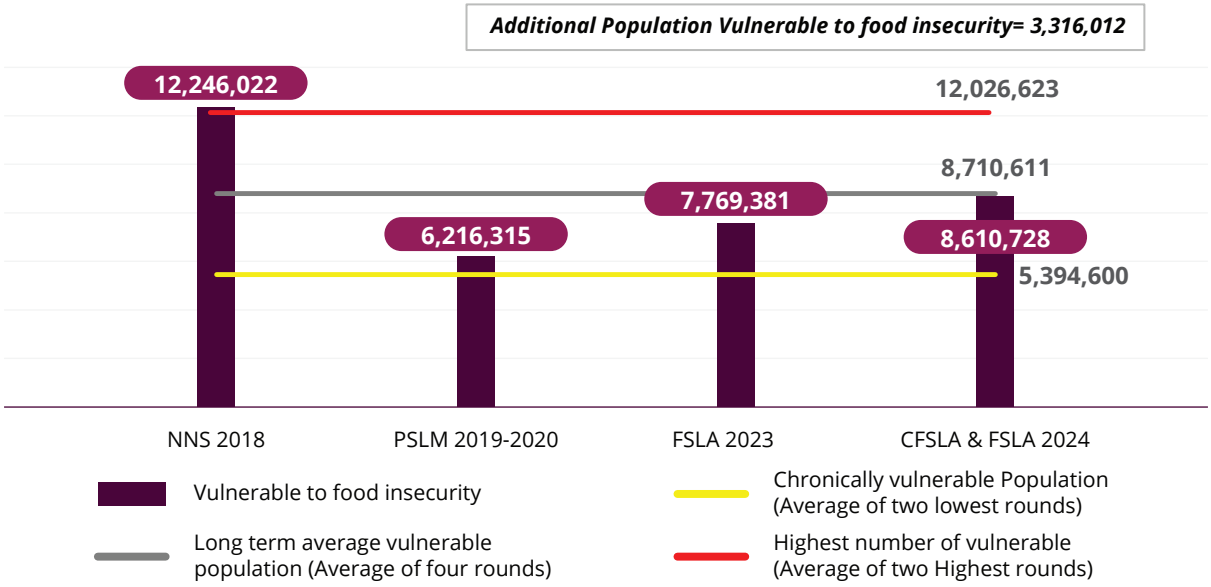


3.1.3.2 Khyber Pakhtunkhwa

The analysis of food security data from the four rounds shows that around 8.71 million people (21% of provincial total population) were consistently food insecure between 2018-2024 at some point. Out of this, around 13% of the population was found chronically food insecure.

The analysis also shows that an additional 3.31 million people (8%) may become food insecure in case of a medium level shock. For example, at COVID time, the food insecurity jumped from 14% in 2019 to 32% in 2020.

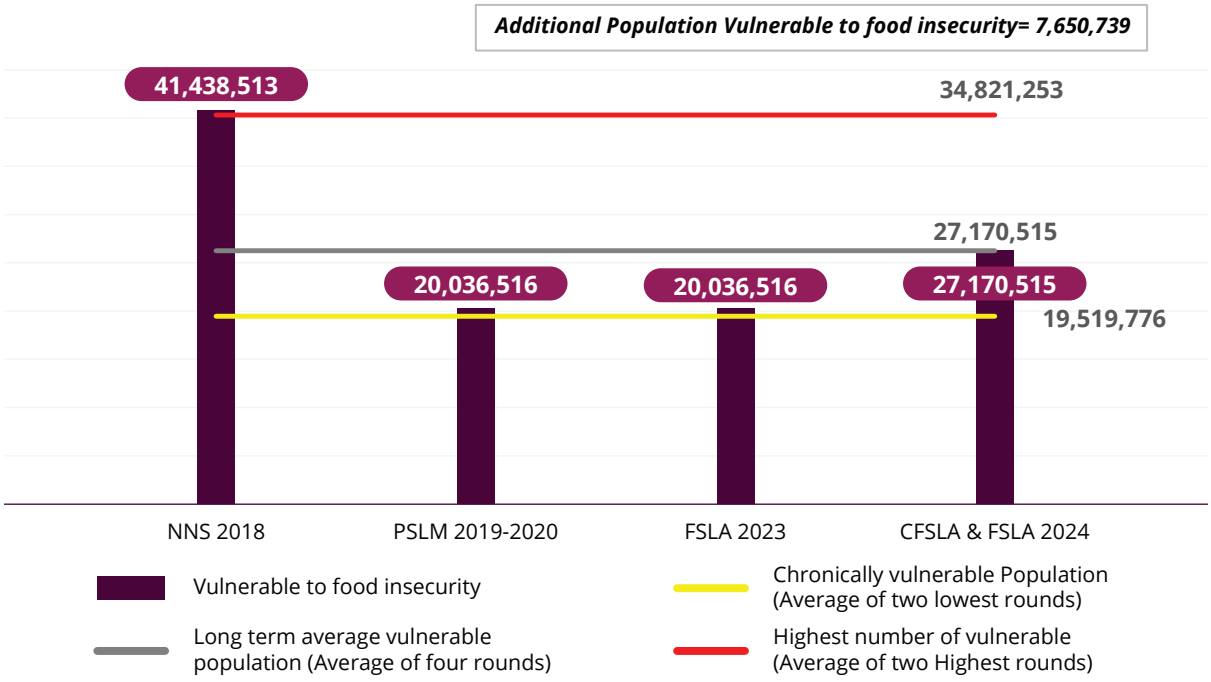
Figure 5: Estimated food insecure population - KP



3.1.3.3 Punjab

The analysis of food security data from the four rounds shows that around 27 million people (21% of Punjab total population) were consistently food insecure between 2018-2024 at some point. Out of this, around 19.5 million population (15%) was found chronically food insecure. The analysis estimates additional 7.6 million population (6%) could become food insecure in case of a medium level shock. For example, food insecurity in Punjab rose to 39% in 2020 compared to 16% in 2019 (pre-Covid).

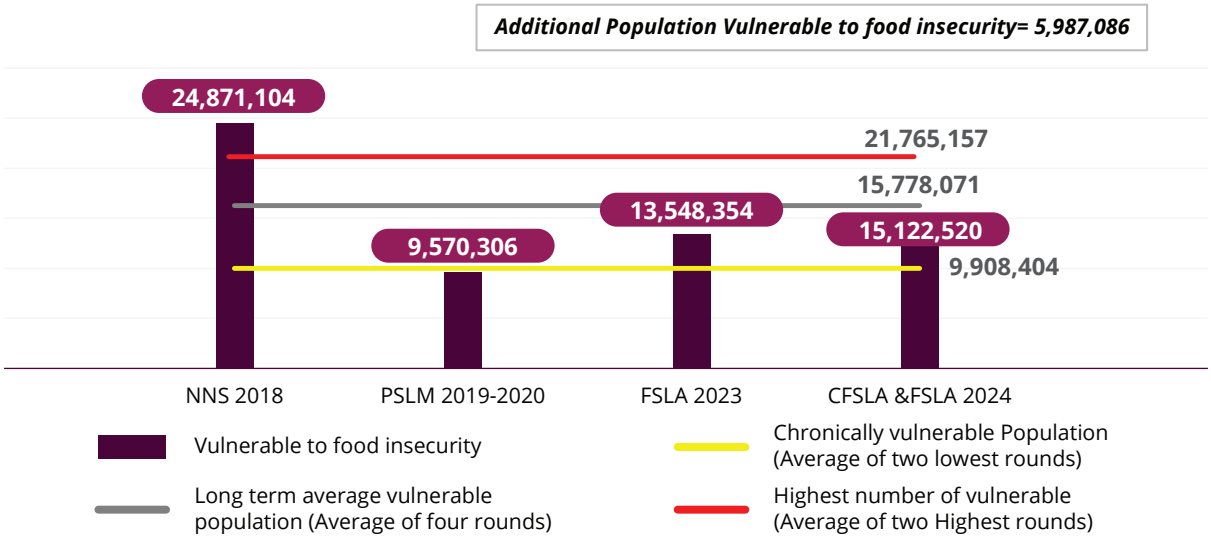
Figure 6: Estimated food insecure population - Punjab



3.1.3.4 Sindh

The analysis of food security data from the four rounds shows that around 15.7 million people (28% of Sindh total population) were consistently food insecure between 2018-2024 at some point. Out of this, around 18% of the population was identified chronically food insecure. The analysis estimates additional 5.9 million people (11%) people may become food insecure in case of a medium level shock. At Covid time, the food insecurity in the province increased to 52% in 2020 compared to 18% in 2019, highlighting the population's high vulnerability to large-scale economic and social disruptions (Pakistan Bureau of Statistics, 2021).

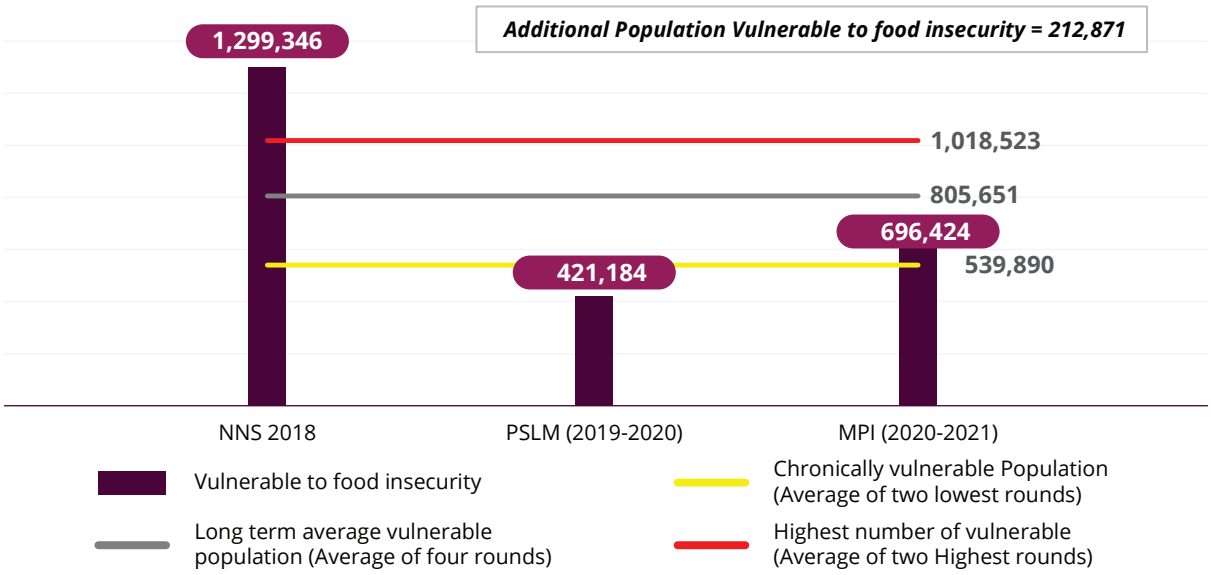
Figure 7: Estimated food insecure population - Sindh



3.1.3.5 Azad Jammu & Kashmir (AJ&K)

The analysis of food insecurity data for AJ&K shows that around 0.8 million people (20% of its total population) are consistently food insecure between 2018-2021 at some point. Out of this, around 13% of the population is found out to be chronically food insecure. The analysis also shows that an additional 5% (0.2 million million) people may become food insecure in case of a medium level shock.

Figure 8: Estimated food insecure population - AJ&K



3.1.3.6 Gilgit Baltistan

The analysis of food security data for Gilgit Baltistan shows that around 0.2 million people (17%) are consistently food insecure between 2016-2020 at some point. Out of this, around 10% of the population is found out to be chronically food insecure. The analysis also shows that an additional 4% (0.08 million million) people may become food insecure in GB during a shock, highlighting the vulnerability of many households to disruptions in livelihoods, markets, or other socio-economic stresses.

Figure 9: Estimated food insecure population - Gilgit Baltistan

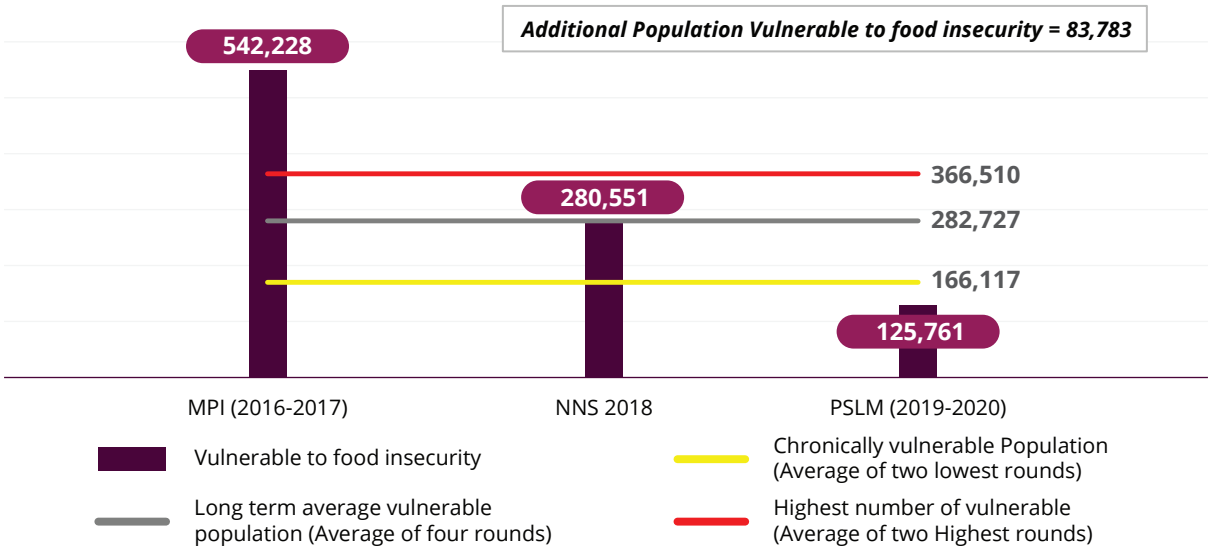
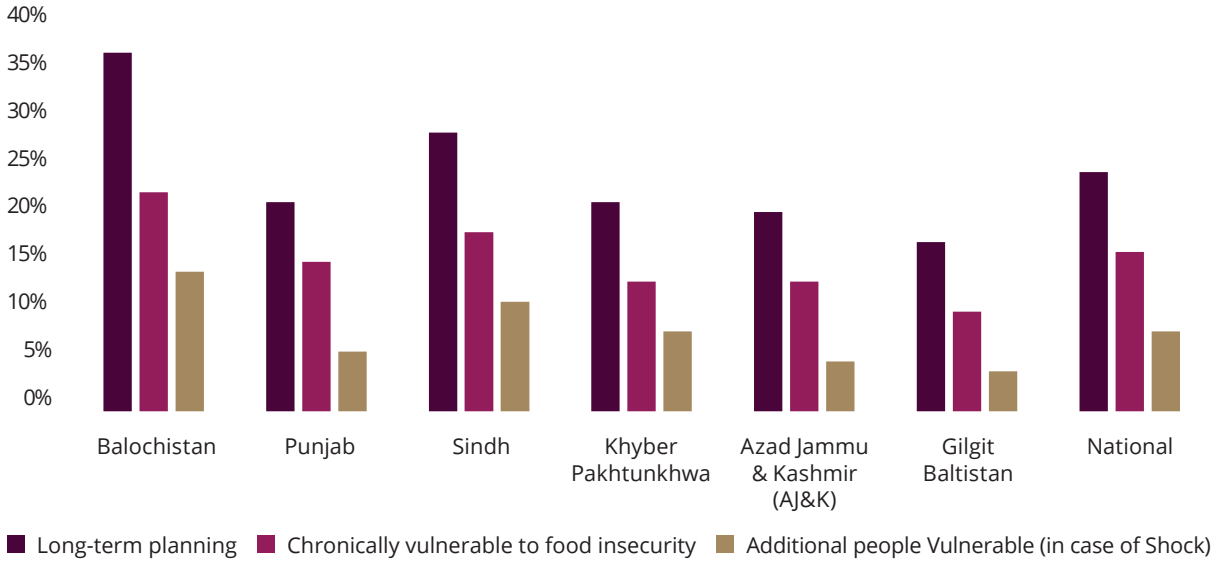


Table 8: Food insecure population estimates[5]



Data Gaps/Limitations

For the third and fourth rounds of food insecurity analysis, data were not available for all districts. Consequently, for the third round, food insecurity estimates for districts with missing data were derived from the Pakistan Social and Living Standards Measurement (PSLM) Survey, which was the most recent and comprehensive nationally representative survey available at the time.

For the fourth round, data were available for only 68 districts across Sindh, Balochistan, and Khyber Pakhtunkhwa. For the remaining districts, food insecurity estimates were calculated using the average of the first three rounds of available data. This approach was adopted as a pragmatic and methodologically sound alternative to address data gaps while maintaining national coverage.

This data-gap management approach was reviewed and endorsed by the ICA Technical Committee, which agreed that it represented the most appropriate and feasible option under the prevailing data constraints.

3.1.4 Population Growth, Income and Food Insecurity Dynamics

3.1.4.1 Average Annual Population Growth Rates

Average Annual growth rates for Pakistan from the latest 7th Housing and Population Census 2023 shows that Pakistan's population has reached to 241.49 million up from 207.68 million in 2017. This reflects an average annual growth rate of 2.55% from 2017 to 2023. The growth rates observed for Punjab, Khyber Pakhtunkhwa, Sindh, Balochistan, and ICT are 2.53%, 2.38%, 2.57%, 3.20%, and 2.81%, respectively[6].

The districts with relatively high population across the four provinces include Lahore and Faisalabad in Punjab; Peshawar in Khyber Pakhtunkhwa; Karachi East and Karachi Central in Sindh; and Quetta in Balochistan. Some districts show relatively low growth rates, while others exhibit unexpectedly high increases. Districts with growth rates near or above 4% include:

5 Note: These are planning estimates. Actual numbers should be derived from emergency assessments in the event of a crisis and plans adjusted throughout the programming cycle based on assessment findings.

6 7th Population & Housing Census 2023- National Census Report

Khyber Pakhtunkhwa: Lower Kohistan (9.05%), Orakzai (7.3%), Upper Kohistan (5.48%), South Waziristan (4.7%), North Waziristan (4.25%), and Kurram (4.16%).

Sindh: Karachi East (5.32%), Karachi South (4.71%), Karachi West (4.35%), Karachi Central (4.3%), and Malir (3.99%).

Balochistan: Washuk (9.51%), Panjgur (8.36%), Kharan (8.17%), Awaran (6.64%), Kachhi (6.25%), Jhal Magsi (5.35%), Duki (5.02%), Surab (4.99%), Kalat (4.93%) and Harnai (4.68%).

This increase in annual population growth rates is likely to place additional pressure on livelihoods, basic services and natural resources, posting further challenges to sustainable development, food security and poverty reduction efforts. The impact is expected to be particularly pronounced in districts that are already characterized by high levels of food insecurity and poverty,where existing vulnerabilities may be exacerbated and the demand for assistance and development support may continue to grow.

3.1.4.2 Average Monthly Income

Recent HIES survey by PBS shows that at national level, the average monthly nominal household income has increased significantly from PKR 41,545 in 2018-19 to PKR 82,179 in 2024-25, reflecting an overall growth. However, this increase was more than offset by the sharp rise in inflation during the same period, resulting in a decline in real household income and purchasing power. Despite overall income growth, significant disparities persist across consumption groups. In 2024–25, households in the poorest quintile earned an average of PKR 41,851, while those in the richest quintile earned PKR 139,317, more than three times higher. Also, the average numbers of income earners per household has decreased over time, reflecting a modest reduction in household labor fore participation and income divarication. This trend may increase the vulnerability of households, particularly among poorer segments of the population, to economic shocks and rising living costs.

3.1.4.3 Percentage of Monthly Expenditure on Food Items

The HIES survey 2024-2025 reveals that nearly half of average monthly household expenditure goes to food. Macroeconomic pressures are increasingly becoming a challenge for food security in the country. High inflation, declining purchasing power, have reduced households' food affordability. Following a period of easing in 2025, inflationary pressures have re-emerged, with Consumer Price Index (CPI) based headline inflation rising to around 12 percent in May 2026. Rising climate variability has further exacerbated food security risks by disrupting agricultural production, reducing yields, and increasing transportation and distribution costs. These impacts, combined with external economic shocks and volatility in global commodity markets, have placed additional upward pressure on domestic food prices. As a result, many households continue to face constraints in meeting their food and other essential needs, increasing their vulnerability to food insecurity and poverty.

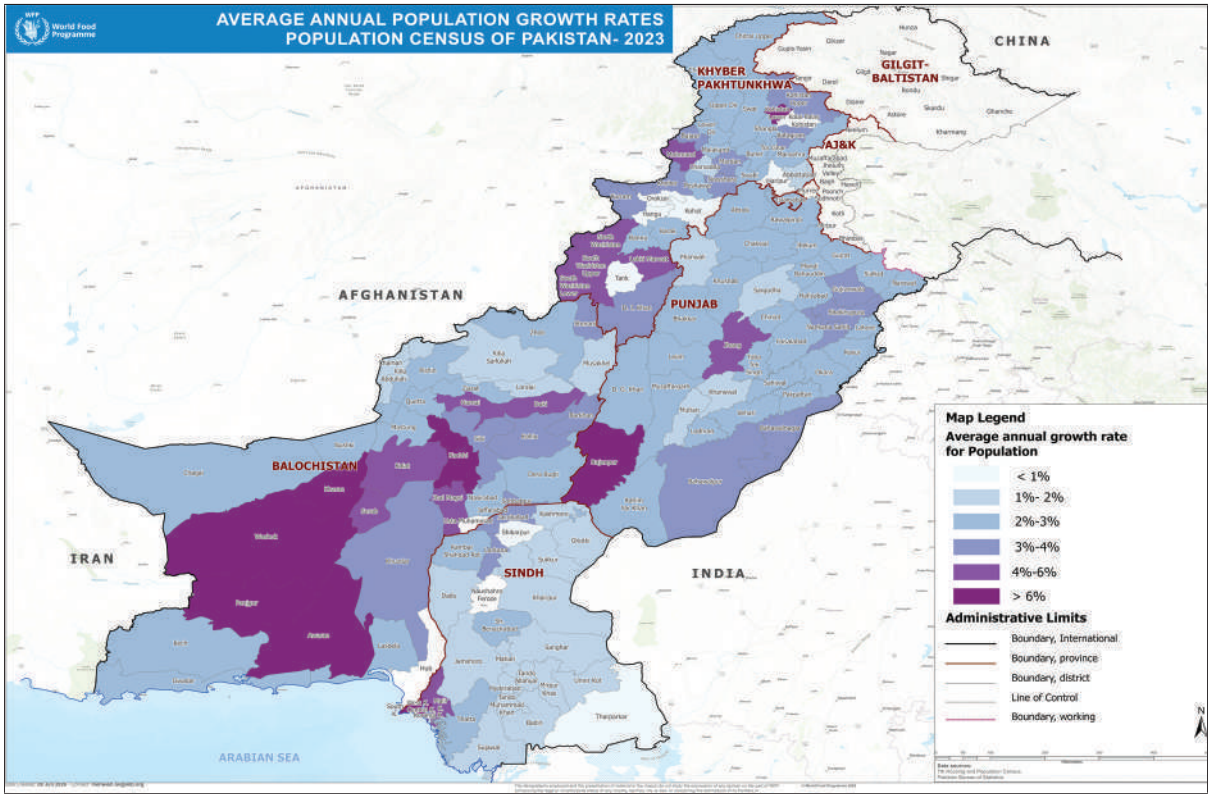
3.1.4.4 Ratio of the Cost of a Healthy Diet (CoHD) to Real Food Expenditure

In 2023, FAO and PBS conducted a study on cost of healthy diet and found that the cost of healthy diet CoHD in Pakistan increased substantially between 2019 and 2023, driven by high inflation resulting from the COVID-19 pandemic, the Russia-Ukraine conflict, the 2022 floods, exchange rate depreciation, rising energy costs, and supply-side disruptions.

The study showed that at national level, the CoHD was 1.6 times higher than the real food expenditure per adult equivalent per day in 2023, meaning household would need to spend about 60 percent more to afford the least-expensive healthy diet. As a result, 82 percent of households were unable to afford a healthy diet in 2023, a proportion that has gradually increased since 2019. Similar trends were observed across most provinces; however, in Balochistan, affordability remained persistently low, with around 95 percent of households unable to afford a healthy diet throughout the period. In contrast, Punjab consistently recorded the highest share of households able to afford a healthy diet, indicating relatively better economic access to nutritious food[7].

7 Measuring cost and affordability of Healthy diet in Pakistan - FAO and PBS

Figure 10: Average annual growth rates - Population (Map)



3.2 District Wise Food Insecurity Classification

3.2.1 Methodology

For the classification of districts based on recurrence of food insecurity, provincial level thresholds were established using the same four rounds of food insecurity data presented in Table 6. The analysis assessed the number of times a district's prevalence of moderate to severe food insecurity exceeded the respective provincial threshold across the four rounds. Based on the frequency with which the threshold was crossed, districts were accordingly categorised into three categories: low, medium and high food insecurity.

The provincial thresholds were determined through a consensus based process involving experts from Technical Committee. These thresholds were derived from weighted averages of the FIES estimates, with high weights assigned to the 2024 round from PSLM survey, reflecting its higher reliability and relevance. Relative weights were assigned to the remaining two rounds based on their temporal proximity. The table below shows the thresholds for food insecurity at the provincial level that were agreed upon and subsequently used for the district wise classification.

Table 9: Provincial thresholds for food insecurity classification of districts

Province	Threshold (%)	Definition of Threshold
Balochistan	**33.5%**	Relative higher average for PSLM and for latest rounds of 2024 with relative weights for the other two rounds based on the date.
KP	**20.35%**	
Punjab	**19.29%**	
Sindh	**28.86%**	
AJ&K	**17%**	higher average for the PSLM followed by the latest ones (MICs and NNS)
GB	**23%**	



For final classification, the classes were ranked and broken down into Terciles (three equal groups) to determine Low (0-1 recurrence), Medium (2 recurrences) and High (3-4 recurrences).

3.2.2 Provincial Summary - Food Insecurity Classification of Districts

3.2.2.1 Balochistan

The threshold of food insecurity for Balochistan was set at 33.5% as discussed in section 3.2.1. Districts are then classified into low, medium and high food insecurity categories based on the number of times their food insecurity prevalence exceeded this threshold during the analysis period.

- Low Food Insecurity: Fifteen districts are classified as low food insecure including Zhob, Sherani, Killa Saifullah, Loralai, Duki, Ziarat, Harnai, Sibi, Kohlu, Mastung, Jhal Magsi, Khuzdar, Kech, Chaman and Gwadar.
- Medium Food Insecurity: Ten districts are classified as medium food insecure including Pishin, Quetta, Nushki, Kalat, Surab, Dera Bugti, Nasirabad, Lasbela, Hub and Panjgur.
- High Food Insecurity: eleven districts fall in high food insecure category which include MusaKhel, Barkhan, Killa Abdullah, Usta Muhammad, Jaffarabad, Sohbatpur, Awaran, Washuk, Kharan, Chagai and Kacchi.

Map 11 shows the classification of districts into low, medium and high food insecurity classes based on the ICA methodology.

3.2.2.2 Khyber Pakhtunkhwa

The threshold of food insecurity for KP was set at 20.35% as discussed in section 3.2.1. Districts are then classified into low, medium and high food insecure based on the number of times their food insecurity prevalence exceeded this threshold during the analysis period.

- Low Food Insecurity: Thirteen districts are classified as low food insecure including Haripur, Abbottabad, Buner, Mardan, Malakand, Swabi, Nowshera, Kohat, Karak, Bannu, Kurram, Lakki Marwat and D.I. Khan. For Kurram, data from latest surveys report low household food insecurity between 10%-14%. Additional and latest data for district Kurram can make the results further reliable.
- Medium Food Insecurity: Eighteen districts are classified as medium food insecure including Kohistan Upper, Kohistan Lower, Kolai Palas Kohistan, Shangla, Tor ghar, Manshera, Swat, Upper Dir, Lower Dir, Bajaur, Peshawar, Khyber, Orakzai, Hangu, North Waziristan, Chitral Upper, South Waziristan Upper and South Waziristan Lower.
- High Food Insecurity: Five districts fall in high food insecure category which include Chitral Lower, Mohmand, Charsadda, Battagram and Tank.

Map 12 shows the classification of districts into low, medium and high food insecurity classes based on the ICA methodology.

Figure 11: Recurrence of food insecurity – Balochistan (Map)

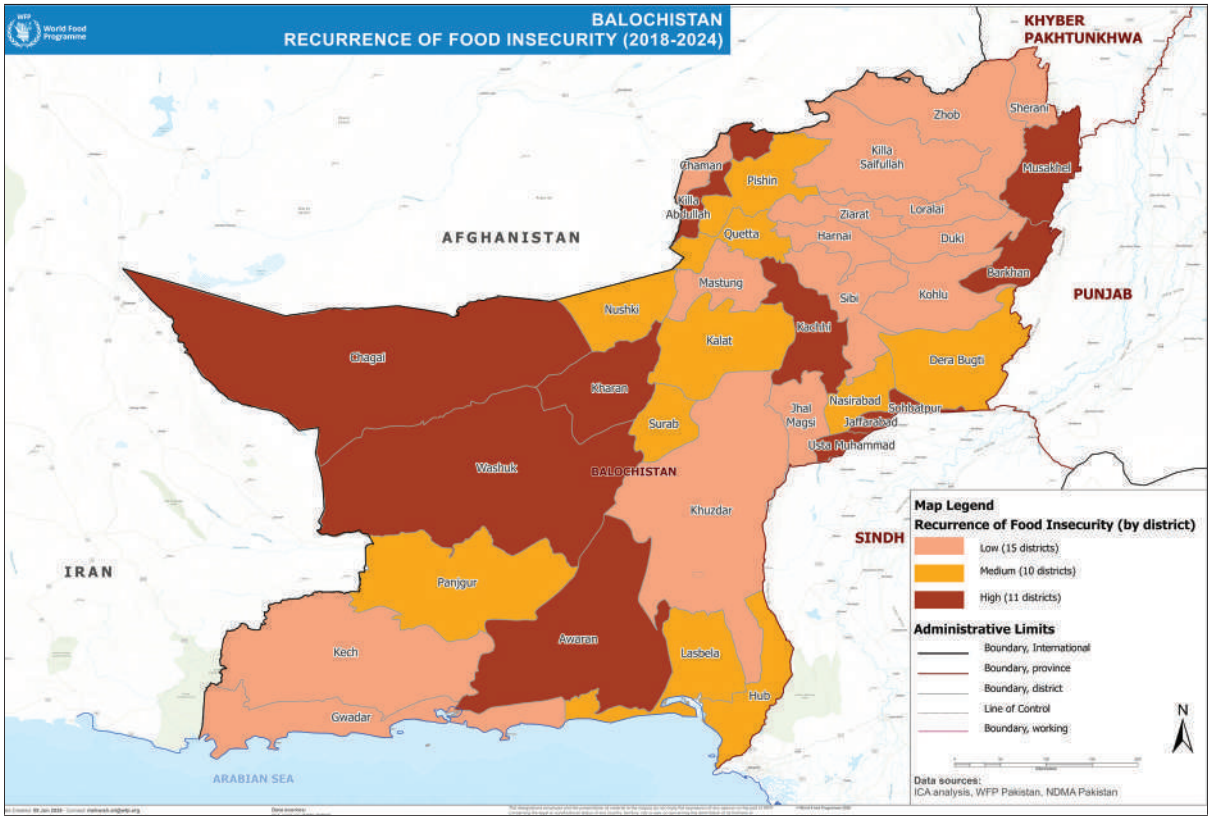
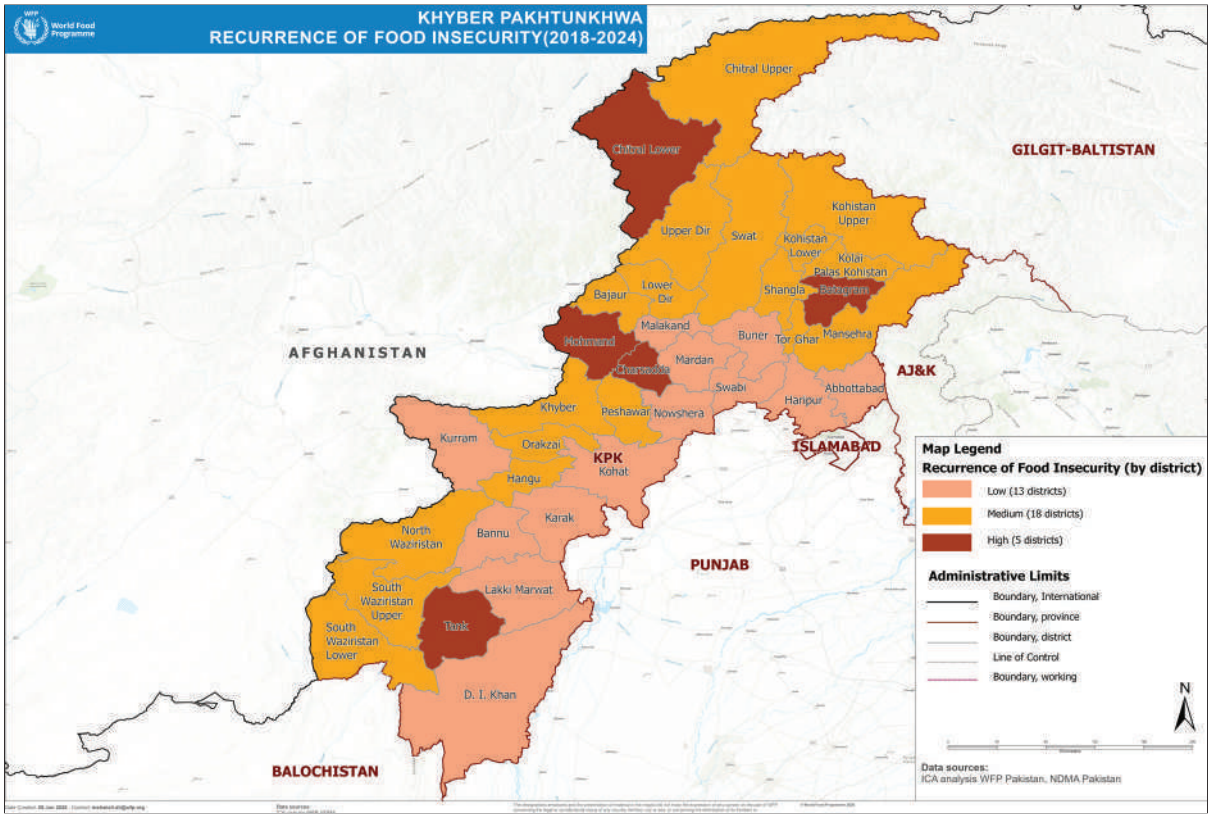


Figure 12: Recurrence of food insecurity - Khyber Pakhtunkhwa (Map)





3.2.2.3 Punjab

The threshold of food insecurity for Punjab was set at 19.29% as discussed in section 3.2.1. Districts are then classified into low, medium and high food insecure based on the number of times their food insecurity prevalence exceeded this threshold during the analysis period.

- Low Food Insecurity: Nineteen districts are classified as low food insecure including Multan, Sahiwal, Toba Tek Singh, Okara, Faisalabad, Nankana Sahib, Chiniot, Hafizabad, Mandi Bahauddin, Sargodha, Gujrat, Sialkot, Narowal, Jhelum, Rawalpindi, Chakwal, Mianwali, Attock and Murree.
- Medium Food Insecurity: Eight districts are classified as medium food insecure including Khushab, Gujranwala, Sheikhupura, Lahore, Pakpattan, Vehari, Bhakkar and Rajanpur.
- High Food Insecurity: Ten districts fall in high food insecure category which include Jhang, Kasur, Khanewal, Leiah, Bahawalnagar, Bahawalpur, Muzaffargarh, Lodhran, Dera Ghazi Khan and Rahim Yar Khan. Though most of these like Kasur, Khanewal, Lodhran and Jhang are irrigated and good producing districts, the high rates of food insecurity and malnutrition may be attributed to the fact that majority of the farmers are small holder/subsistence farmers and make 90%-95% of the farming community and have poor access to food.

Map 13 shows the classification of districts into low, medium and high food insecurity classes based on the ICA methodology.

3.2.2.4 Sindh

The threshold of food insecurity for Sindh was set at 28.6% as discussed in section 3.2.1. Districts are then classified into low, medium and high food insecure based on the number of times their food insecurity prevalence exceeded this threshold during the analysis period.

- Low Food Insecurity: Eight districts are classified as low food insecure including Sukkur, Larkana, West Karachi, East Karachi, Central Karachi, Malir Karachi, South Karachi and Korangi Karachi.
- Medium Food Insecurity: Eleven districts are classified as medium food insecure including Kashmore, Shikarpur, Ghotki, Khairpur, Sanghar, Matiari, Umerkot, Hyderabad, Tando Muhammad Khan, Thatta and Sujawal.
- High Food Insecurity: Nine districts fall in high food insecure category which include Jacobabad, Kambar Shahdadkot, Naushehro Feroze, Dadu, Shaheed Benazirabad, Jamshoro, Tando Allah yar, Mirpur Khas and Badin.
- One district of Tharparkar remains uncategorized due to unavailability of quality data. There is a need to have additional assessments for Tharparkar district in order to better document the food insecurity experiences.

Map 14 shows the classification of districts into low, medium and high food insecurity classes based on the ICA methodology.

Figure 13: Recurrence of food insecurity – Punjab (Map)

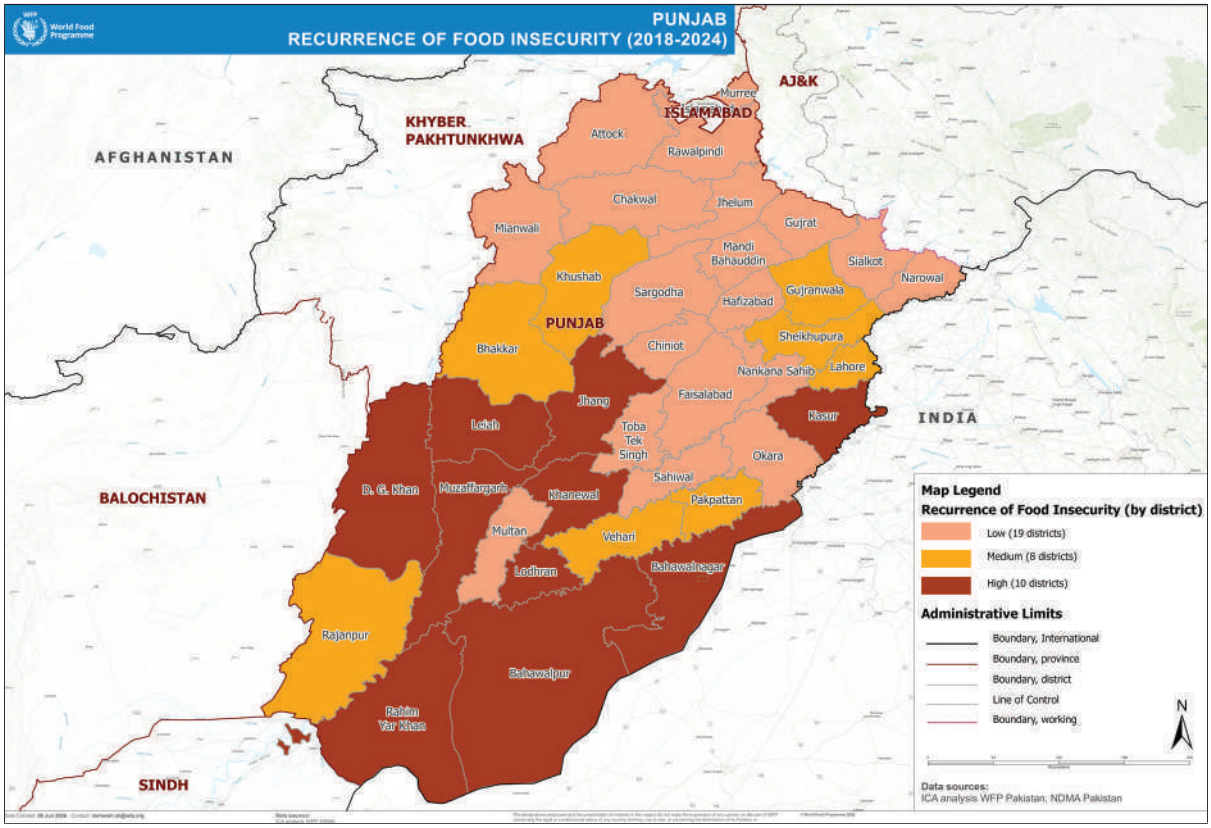
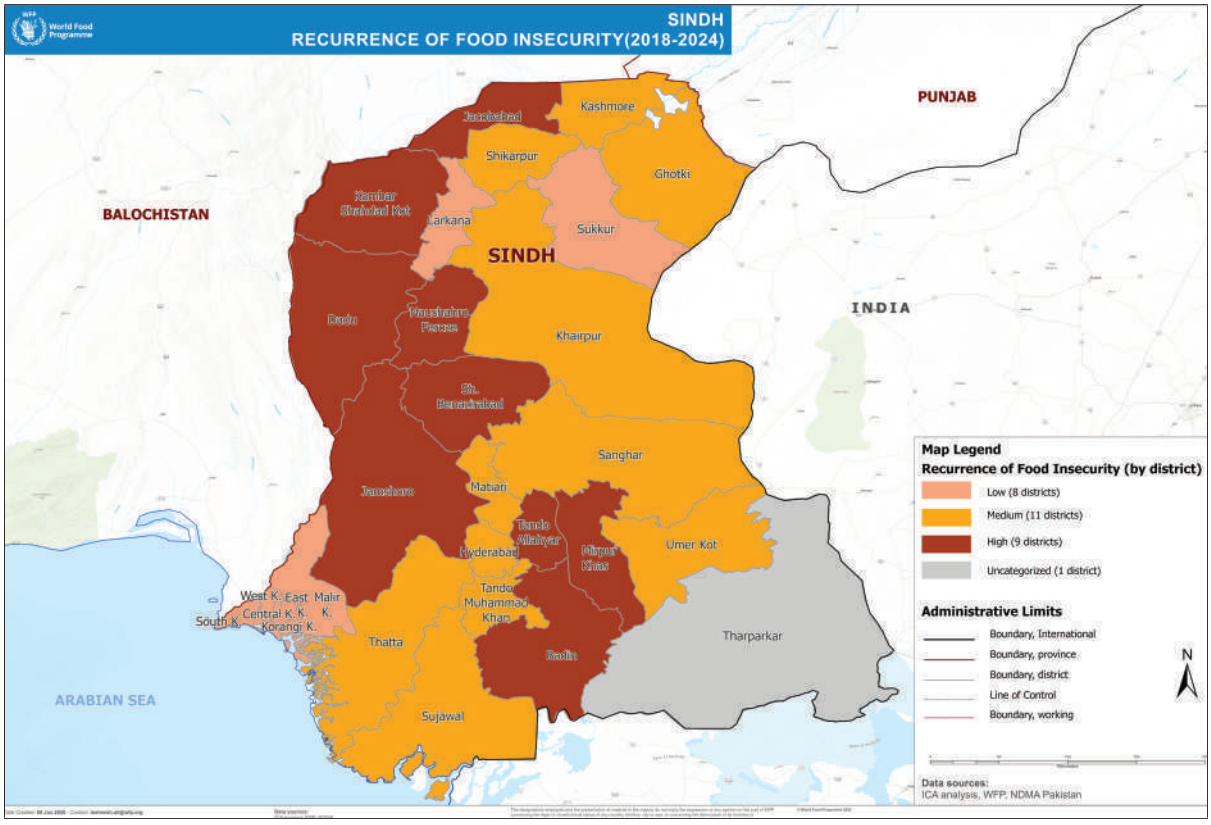


Figure 14: Recurrence of food insecurity – Sindh (Map)



3.2.2.5 Azad Jammu & Kashmir (AJ&K)

The threshold of food insecurity for AJ&K was set at 17% as discussed in section 3.2.1. Districts are then classified into low, medium and high food insecure based on the number of times their food insecurity prevalence exceeded this threshold during the analysis period.

- Low Food Insecurity: Four districts fall in high food insecure category which include Neelum, Muzaffarabad, Jhelum and Haveli.
- Medium Food Insecurity: Six districts are classified as medium food insecure including Bagh, Poonch, Sudhnoti, Kotli, Mirpur and Bhimber.

Map 15 shows the classification of districts into low, medium and high food insecurity classes based on the ICA methodology.

3.2.2.6 Gilgit Baltistan

The threshold of food insecurity for GB was set at 23% as discussed in section 3.2.1. Districts are then classified into low, medium and high food insecure based on the number of times their food insecurity prevalence exceeded this threshold during the analysis period.

- Low Food Insecurity: Five districts fall in high food insecure category which include Astore, Diamir, Gilgit, Ghizer and Hunza.
- Medium Food Insecurity: Four districts of Ghanche, Kharmnag, Shigar and Nagar are classified as medium food insecure

Map 16 shows the classification of districts into low, medium and high food insecurity classes based on the ICA methodology.



Figure 15: Recurrence of food insecurity – AJ&K (Map)

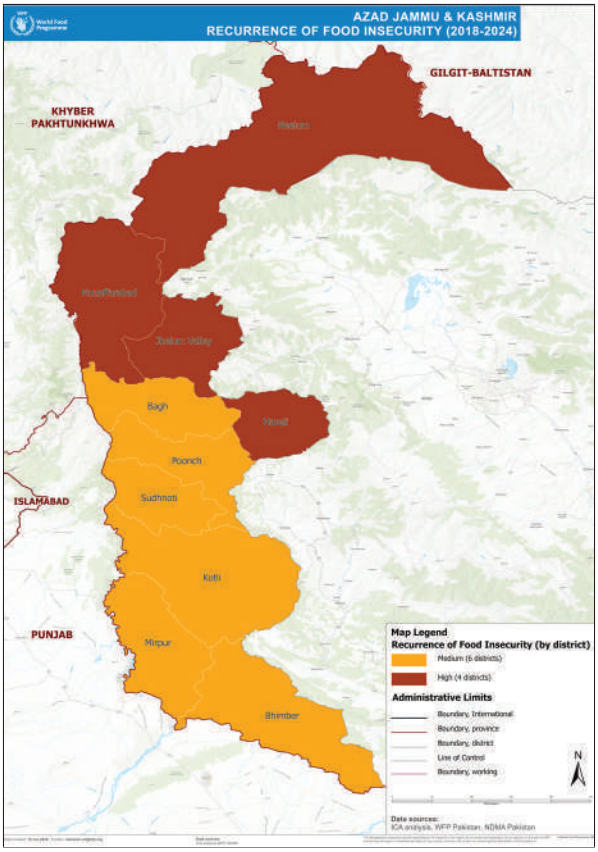
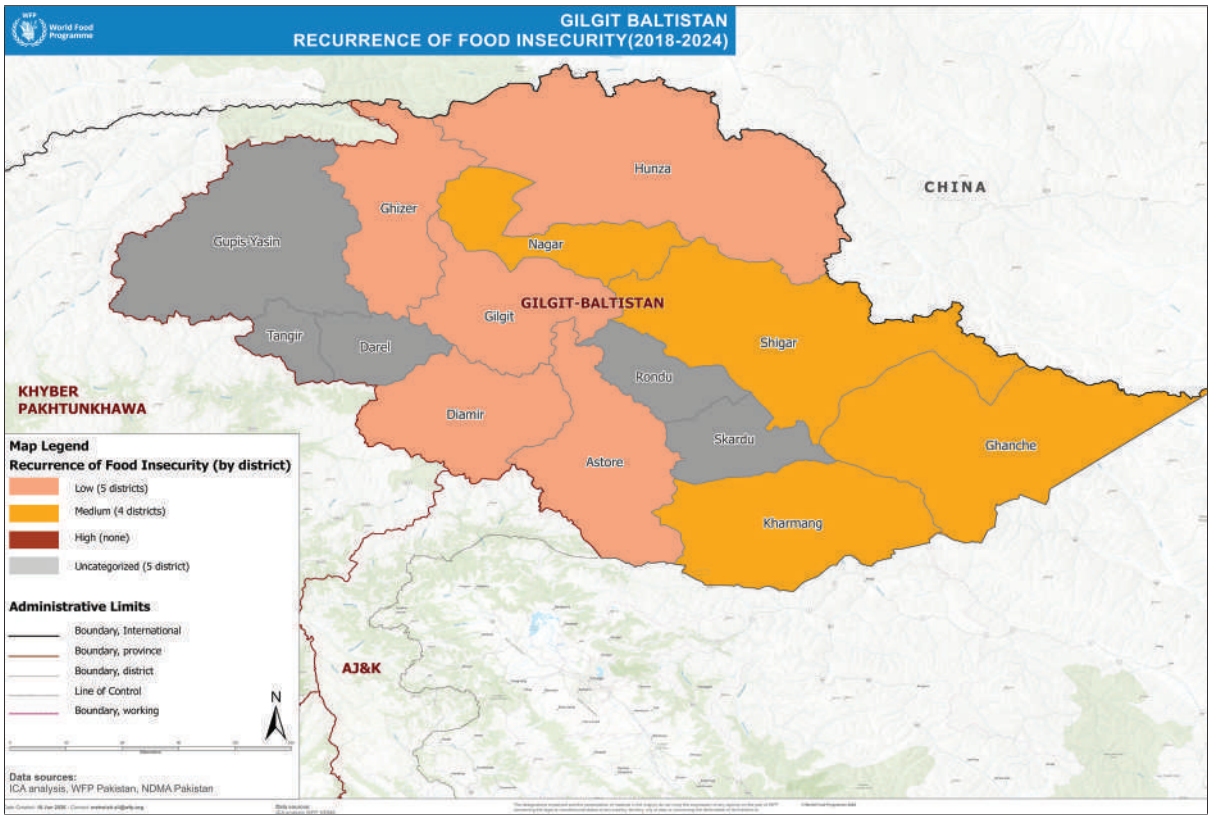


Figure 16: Recurrence of food insecurity – GB (Map)



Limitations of the District Level Food Insecurity Classification

The district-level food insecurity classification should be interpreted with the following limitations in mind:

a) Provincial thresholds limit inter-provincial comparisons:

The thresholds used for food insecurity classification are developed separately for each province based on provincial averages. As a result, direct comparison of districts classification across provinces is not recommended. A district classified as highly food insecure in one province may not be directly comparable to a district with the same classification in another province, as the underlying thresholds differ.

b) Limited availability of recent FIES data for Punjab:

- One of the key limitations of the analysis is unavailability of latest FIES data for Punjab. Consequently, estimates for Punjab relied on assumptions and derived values to address data gaps, which may affect the precision of the districts level classification.

c) **Potential discrepancies between agricultural production and food insecurity outcomes:**

- Some districts in Punjab like Kasur, Jhang, Lodhran, Khanewal classified as highly food insecure despite being major agricultural production areas. While findings from other national surveys about poverty, wasting, stunting and broader socio-economic conditions support the classification, updated household-level surveys would be beneficial to further validate and refine the results.

d) **Exclusion of Tharparkar district:**

- Due to data quality concerns and inconsistencies in the available information, Tharparkar district was excluded from the final categorization. Consequently, the results do not provide a food insecurity classification for this district.

e) **Classification reflects recurrence rather than severity:**

The categorization is based on the frequency with which districts exceeded the established food insecurity threshold during the analysis period. Therefore, the results capture the recurrence and persistence of food insecurity rather than the magnitude or severity of food insecurity at a particular point in time.

Cross Validations with other National Surveys

For some of the districts, there was a consensus among the technical committee to investigate further into other national surveys to justify the classifications for the results. Hence, the below findings from other national surveys and data are presented below in order to better understand the classification, especially where it differed from common perception.

- **Kasur district** faces a combination of adverse socio-economic factors. It reports the highest prevalence of food insecurity in Punjab (PSLM 2019–2020), with 27% of households living in poverty, the highest in Lahore division (MICS 2018). Nutritional indicators are equally concerning stunting rates range from 32.7% to 34.2%, and wasting rates reach as high as 28.1% (NNS 2018, MICS 2018), both exceeding and matching provincial averages. The overall malnutrition rate stands at 38%, reflecting widespread nutritional deficiencies (DDMP Kasur). Additionally, Kasur's flood-prone geography, large average household size of 7, and heavy reliance on livestock (61%) as a primary livelihood source (LBS 2021, PBS) further strain food access and resilience. These intersecting vulnerabilities strongly justify Kasur's ranking as a high food insecure district.
- **Lodhran district** is also classified as high food insecure. NNS 2018 shows that Lodhran district has the highest food insecurity percentage (62%) in the province,



far exceeding the provincial average. The PSLM survey reported this rate of 22.7% further reinforces this concern, placing Lodhran among the most affected districts. Nutritional outcomes are particularly severe, with wasting at 23.5% and stunting at 44% reported by MICS 2017-18) and the highest in the province and significantly above provincial averages. Additionally, 47% of the population lives below the poverty line (MPI, MICS 2017-18), which is nearly double the provincial average of 26%. These figures collectively highlight a critical situation of chronic deprivation and malnutrition, supporting Lodhran's classification as a highly food insecure district.

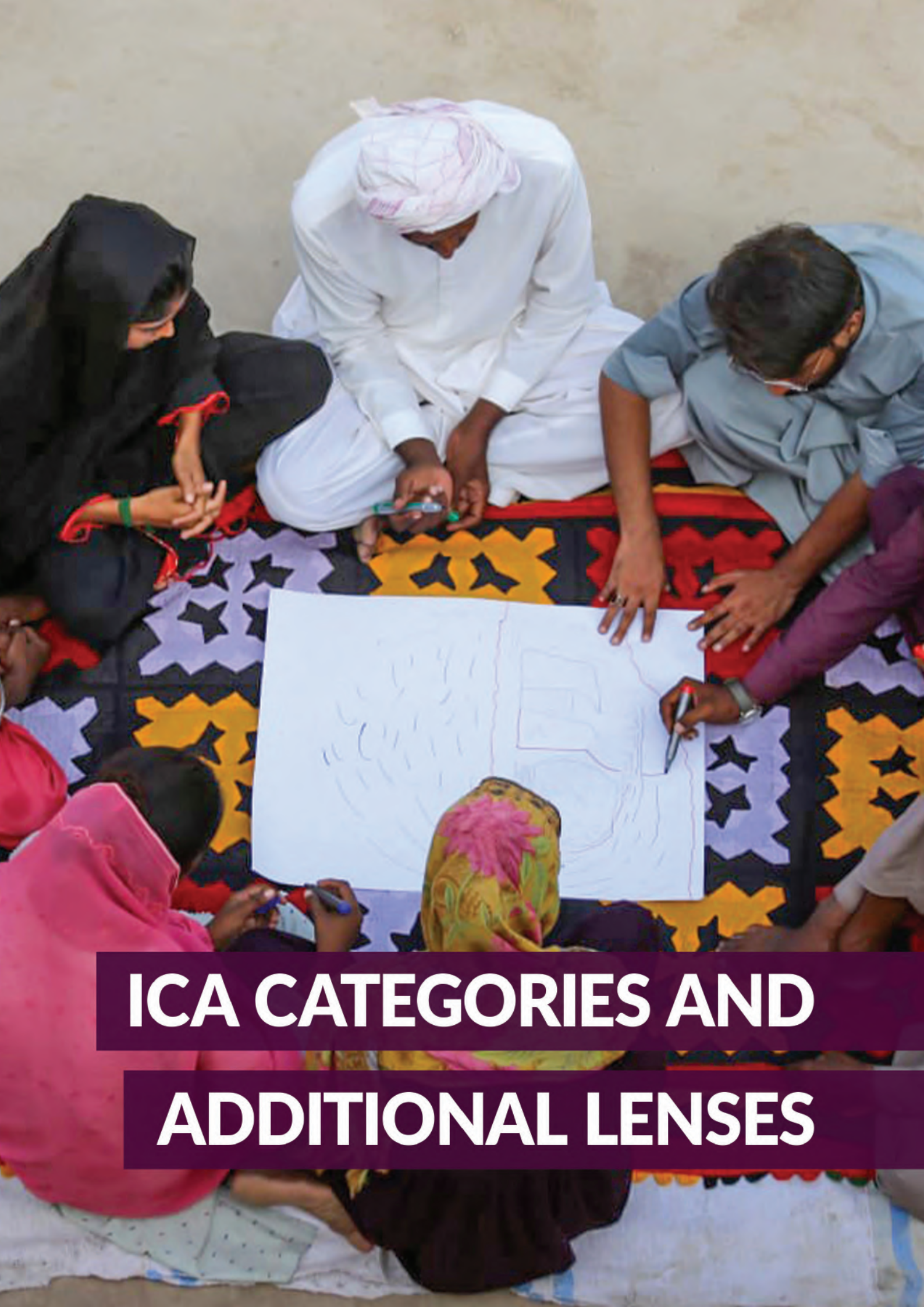
- **Khanewal district** is ranked as food insecure due to consistently high indicators of nutritional and economic vulnerability. The district's food insecurity rate stands at 38.4% (NNS 2018), significantly exceeding the provincial average of 32%, and is further supported by a 24.8% rate reported in PSLM, nearing the highest in the province. Nutritional deficiencies are evident, with wasting prevalence at 25.7%-dramatically higher than the provincial average of 15.3%-and stunting at 36% (Government of Pakistan and UNICEF, 2018), also above the provincial average of 31.5%. Additionally, 31% of households in Khanewal are classified as poor (MPI, MICS 2019), surpassing the provincial average of 26%, indicating widespread economic hardship. These combined factors underscore the district's critical food security challenges and justify its high-risk classification.

- **Jhang district** also demonstrates significant indicators of food insecurity, as reflected in multiple socio-economic and nutritional metrics. The food insecurity rate of 25% (PSLM) is among the highest in the province, closely trailing the peak value of 27%. Nutritional challenges are evident, with a wasting prevalence of 27.4% (NNS 2018), nearly matching the provincial high. Additionally, 35% of households live in poverty (MPI, MICS 2019), well above the provincial average of 26%, underscoring widespread economic hardship. As a generally underdeveloped district in South Punjab, Jhang faces compounded vulnerabilities that severely impact food access and nutritional outcomes. These factors collectively justify its classification as a high food insecure district, warranting focused policy and programmatic attention.



- **Tank** is categorised as highly food insecure because it has reported 20% food insecurity in 2018 and which increased to 32% in latest surveys and PSLM survey. These results are also supported by high rates of Stunting (57%) and wasting (42.7%) in Tank district reported by NNS 2018 and the very high incidence of poverty of around 58.3% poor housholds reported in MICS survey 2019. Between 2018-2024, this district was also hit by floods 2022 and was declared calamity hit with around 2.8 million people affected.
- Similarly, in case of **Charsadda**, latest survey available for 2024 reflects increase in food insecurity potentially attributed to flooding in 2022 whereby it was also notified as calamity hit district, 2 million people were displaced and floods majorly affected crops and population. According to MICS, 2019 Charsadda has the highest percentage of poor housholds in Peshawar division which is 33%.
- Though Nasirabad, **Usta Muhammad and Jaffarabad** are considered the green regions in the province however high food insecurity is reported in these districts between 2018-2024
- For Shaheed Benazirabad and Mirpur Khas, latest food insecurity assessments by FAO and WFP in 2023/2024 indicate increase in household food insecurity. This increase in food insecurity could be attributed to mega floods of 2022 where the southern and central belt of Sindh suffered great losses so the floods could be considered to be the attributing factor for this district's classification among high food insecure districts.
- One district of Tharparkar remains uncategorized due to unavailability of quality data. There is a need to have additional assessments for Tharparkar district in order to better document the food insecurity experiences.

Though most of these like Kasur, Khanewal, Lodhran and Jhang are irrigated and good producing districts, the high rates of food insecurity and malnutrition may be attributed to the fact that majority of the farmers are small holder/subsistence farmers and make 90%-95% of the farming community and have poor access to food.



ICA CATEGORIES AND ADDITIONAL LENSES

4. ICA Categories and Additional Lenses

The core objective of ICA is to perform, through spatial analysis techniques, identification of geographical areas with persistent trends of food insecurity and different levels of natural shocks (hazards). This integrated approach enables the formulation of broad programmatic strategies, including Safety Nets, Disaster Risk Reduction (DRR), Early Warning and Disaster Preparedness to improve food security and reduce vulnerability to natural disasters.

Beyond these core dimensions, the ICA incorporated additional contextual layers related to food security and disaster risk management. These may include indicators such as landslide, land degradation, poverty, malnutrition, and other socio-economic or environmental factors. These supplementary layers are overlaid as lenses enabling a more nuanced understanding of local conditions and supporting the development of more targeted and context specific programme recommendations.

4.1 Technical Analysis Methodology

Step 1 (Food Insecurity Analysis): Districts were classified based on the recurrence of food insecurity above the established provincial thresholds, resulting in low, medium, and high food insecurity classification.

Step 2 (Natural Hazard Analysis): Two additional core dimensions related to natural hazards were analyzed separately, first re-classifying each district from NDMA five-point scale to 3-point scale; Low (1), Medium (2) and High (3), as follows.

These resulting hazard layers were then combined using cross-tabulation techniques to produce a consolidated natural hazard layer, reflecting the relative level of combined hazard of each district, with in a province, subsequently classified into low, medium, and high combined natural hazard. For example, the classifications for two main hazards are combined using cross tabulation as shown below.

Figure 17: ICA process diagram

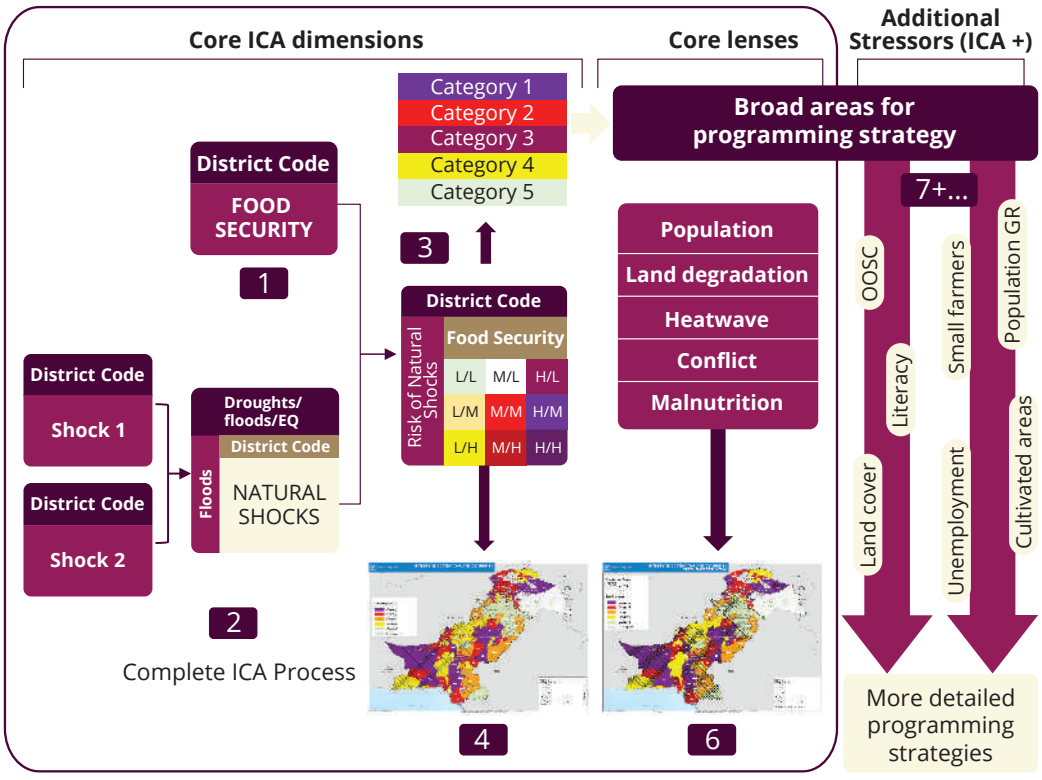


Table 10: Natural hazard data classification

NATURAL HAZARD			
NATURAL HAZARD	Very Low - Low **(1-2)**	Medium **(3)**	High - Very High **(4)**
HAZARD RECLASSIFICATION	Low **(1)**	Medium **(2)**	High **(3)**

Table 11: Combined hazard score

COMBINED HAZARD			
COMBINED NATURAL HAZARD SCORE	**(2-3)**	**(4)**	**(5-6)**
COMBINED HAZARD RECLASSIFICATION	Low **(1)**	Medium **(2)**	High **(5-6)**

Step 3 (Integrated Context Analysis Areas): The food insecurity layer generated in Step 1 was then combined with the consolidated natural hazard layer from Step 2 through cross-tabulation. This process resulted in the identification of nine ICA Areas (Table 12), representing the relative position of districts according to their levels of food insecurity and exposure to natural hazards.

Step 4 (Aggregation into ICA Categories): To facilitate interpretation and support strategic planning, the nine ICA Areas were grouped into five broader ICA Categories (Table 13). These categories provide a simplified framework for visualizing geographic patterns of vulnerability and for developing broad programmatic recommendations tailored to the characteristics of each category.

Table 12: ICA areas classification using combined hazard score and recurrence of food insecurity above threshold

Combined level of natural hazards	Recurrence of vulnerability to food insecurity above threshold		
	Low	Medium	High
Low	Area 5	Area 3 B	Area 3 A
Medium	Area 4 B	Area 2 B	Area 1 B
High	Area 4 A	Area 2 A	Area 1 A

Table 13: ICA categories classification

Risk of Exposure to Natural Shocks	Recurrence of Food Insecurity		
	LOW	MEDIUM	HIGH
MEDIUM	Area 5	Area 3 B	Area 3 A
	CATEGORY 5 Programming that strengthens preparedness to reduce risk and build resilience to natural shocks and other stressors.	**CATEGORY 3** Longer-term programming to address conditions of long-term (chronic) food insecurity likely due to non-climatic causes (e.g., pervasive poverty, protracted conflict, etc.) aiming to improve food security and build resilience to man-made shocks and stressors.	
HIGH	Area 4 B	Area 2 B	Area 1 B
	CATEGORY 4 Programming that strengthens early warning and preparedness (considering land degradation trends) to reduce risk and build resilience to natural shocks and other stressors.	**CATEGORY 2** Programming to address seasonal food insecurity and/or to support post-shock recovery, aiming to reduce risk and build resilience to natural shocks and other stressors.	**CATEGORY 1** Longer-term programming to address conditions of protracted crises and frequent natural shocks that impede recovery, aiming to improve food security, reduce risk and build resilience to natural shocks and other stressors.
	Area 4 A	Area 2 A	Area 1 A

4.1.1 Selection of Core Dimensions for the Provinces

For each province, the ICA categorization was conducted separately, reflecting the variation in predominant shocks and food insecurity thresholds across the provinces. The two primary shocks for each province were identified through broad stakeholder consultations, including provincial representatives, finalized with the consensus of the Technical Committee and evidence from data on recurrence of these shocks. The data on these shocks was based on their prevalence and frequency. Table 14 presents the final set of core dimensions selected for each province and used in the ICA categorization.



Table 14: ICA core dimensions for each province

PROVINCE	TWO MAIN SHOCKS	FOOD INSECURITY
AJ&K	1. Earthquake 2. Rain induced/riverine floods	Food insecurity classification (ICA analysis – section 3.2.3)
BALOCHISTAN	1. Drought 2. Flash floods	
GILGIT BALTISTAN	1. Glacial lake outburst floods (glof) 2. Rain induced/ riverine floods	
KHYBER PAKHTUNKHWA	1. Earthquake 2. Rain induced/riverine floods	
PUNJAB	1. Riverine floods 2. Drought[8]	
SINDH	1. Riverine floods 2. Drought	

4.1.2 Provincial Summary- ICA Categories

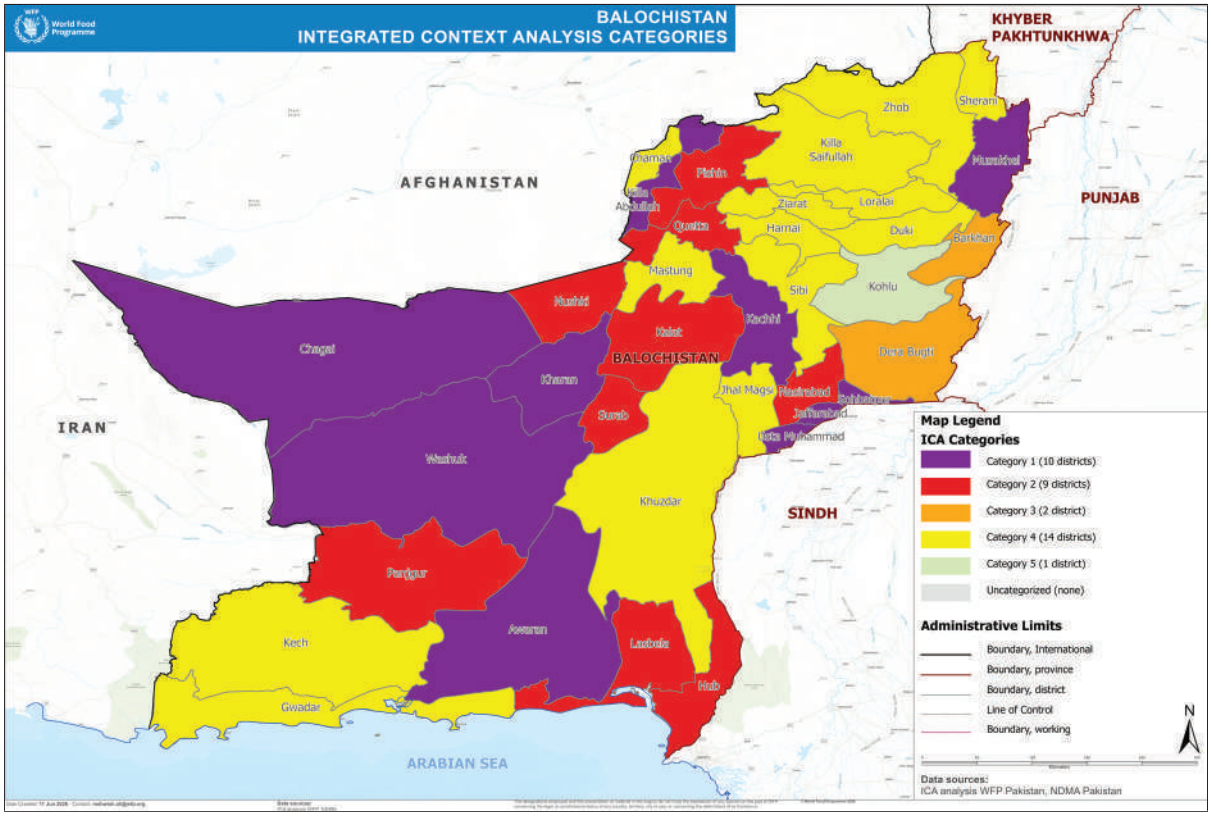
4.1.2.1 Balochistan

For Balochistan, **drought and flash floods** are chosen as two main natural shocks to be used as core dimension for ICA analysis. The risk scores for these two hazards are sourced from risk scoring for hazards carried out by NDMA. Detailed methodology and combined hazard maps are provided in annex 6.1 and 6.2.

- In Balochistan, **ten districts** fall under **category 1** for long term planning to address food insecurity. These include MusaKhel, Killa Abdullah, Kacchi, Kharan, Chagai, Washuk, Usta Muhammad, Sohbatpur, Jaffarabad and Awaran. Though Nasirabad, Usta Muhammad and Jaffarabad are considered the green regions in the province however high food insecurity is reported in these districts between 2018-2024.
- **Nine districts** are in **category 2** for programmes related to seasonal safety nets and post shock recovery. These include Pishin, Quetta, Nushki, Kalat, Surab, Panjgur, Lasbela, Hub and Nasirabad.
- **Two districts** fall under **category 3** which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty. These include Barkhan and Dera Bugti.
- **Fourteen districts** fall under **category 4** which suggests strengthening of early warning and preparedness measures. These include Sherani, Zhob, Killa Saifullah, Ziarat, Loralai.
- Only **one district** Kohlu falls under **category 5** where there is a focus to build resilience in long term.

8 *Note: In Punjab and Sindh, heatwaves were initially identified as one of the key shocks. The technical committee agreed that drought vulnerability could serve as a proxy for heatwave impacts, as the effects of heatwaves on crops often manifest in the form of drought.* However, Heatwaves were also identified as a significant climate risk and included as a Core Lens in the ICA framework. The heat wave vulnerability assessment was piloted for Punjab Province using the 90th percentile methodology, with plans to extend the analysis to Sindh and other relevant provinces in future ICA iterations. *While heatwaves are short-term events and not consistently present throughout the year, they typically occur over a few months and may not directly contribute to food insecurity.*

Figure 18: ICA categories Balochistan (Map)



4.1.2.2 Khyber Pakhtunkhwa

For KP, **earthquake and riverine floods** are chosen as two main natural shocks to be used as core dimension for ICA analysis. The risk scores for these two hazards are sourced from risk scoring for hazards carried out by NDMA. Detailed methodology and combined hazard maps are provided in annex 6.1 and 6.2.

- In KP, **four districts** fall **under category 1** for long term planning to address food insecurity. These include Mohmand, Chitral Lower, Charsadda and Battagram.
- **Twelve districts** are in **category 2** for programmes related to seasonal safety nets and post shock recovery. These include Chitral Upper, Swat, Upper Dir, Lower Dir, Bajaur, Kohistan Upper, Kohistan Lower, Kolai Palas Kohistan, Shangla, Torghar and Mansehra.
- **Seven districts** fall under **category 3** which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty. These include Khyber, Orakzai, Hangu, North Waziristan, South Waziristan Upper, South Waziristan Lower and Tank.
- Another **seven districts** fall under **category 4** which suggests strengthening of early warning and preparedness measures. These include Malakand, Mardan, Abbottabad, Haripur, Nowshera and Dera Ismail Khan.
- **Six districts** fall under **category 5** where there is a focus to build resilience in long term. These include Buner, Swabi, Kohat, Kurram, Karak, Bannu and Lakki Marwat.

Figure 19: ICA categories Khber Pakhtunkhwa (Map)

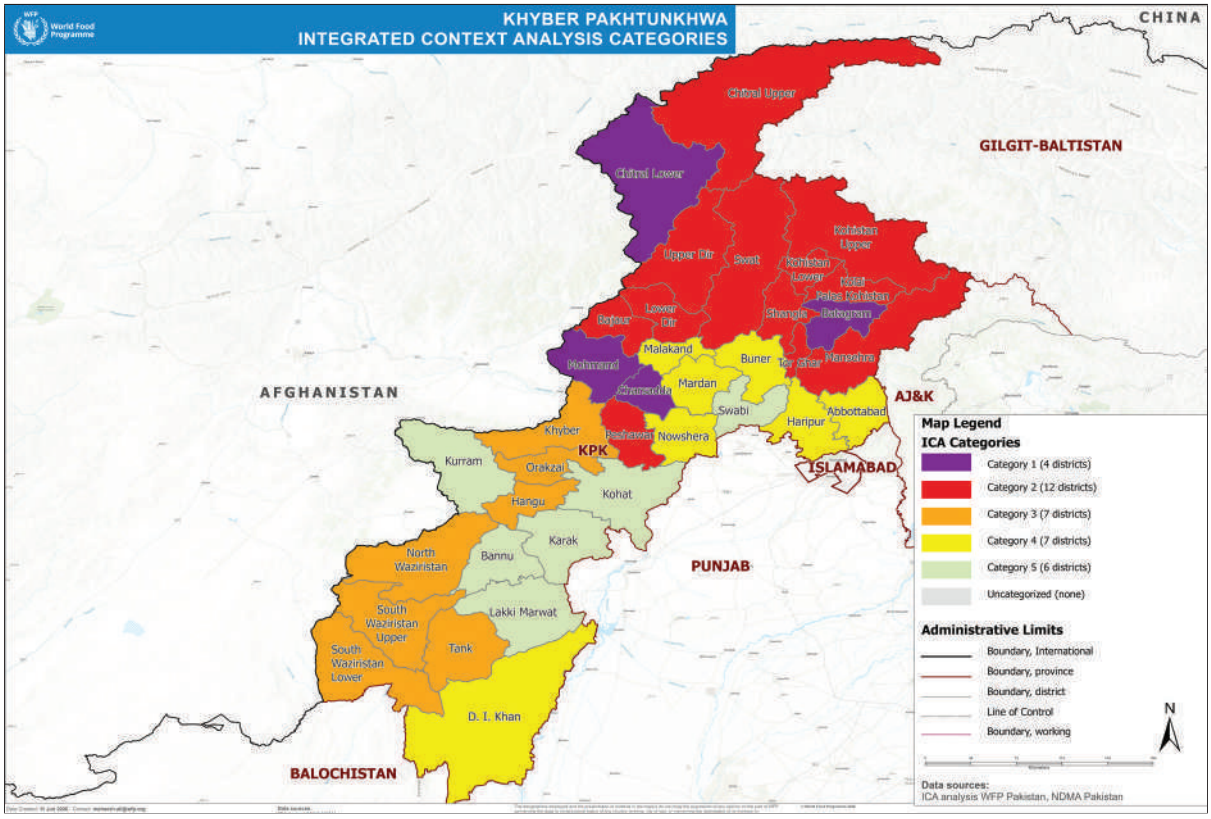
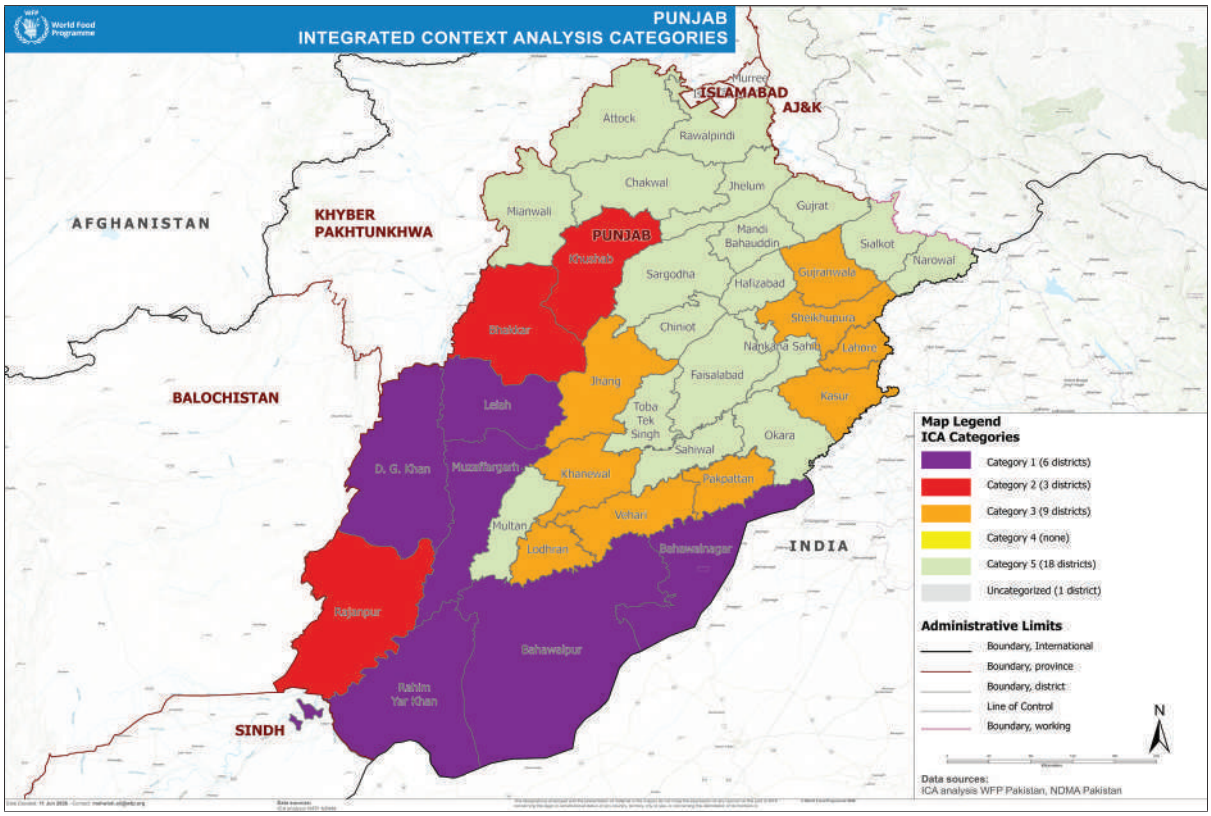


Figure 20: ICA categories Punjab (Map)





4.1.2.3 Punjab

For Punjab, **riverine floods and droughts** are chosen as two main natural shocks to be used as core dimension for ICA analysis. The risk scores for these two hazards are sourced from risk scoring for hazards carried out by NDMA. Detailed methodology and combined hazard maps are provided in annex 6.1 and 6.2.

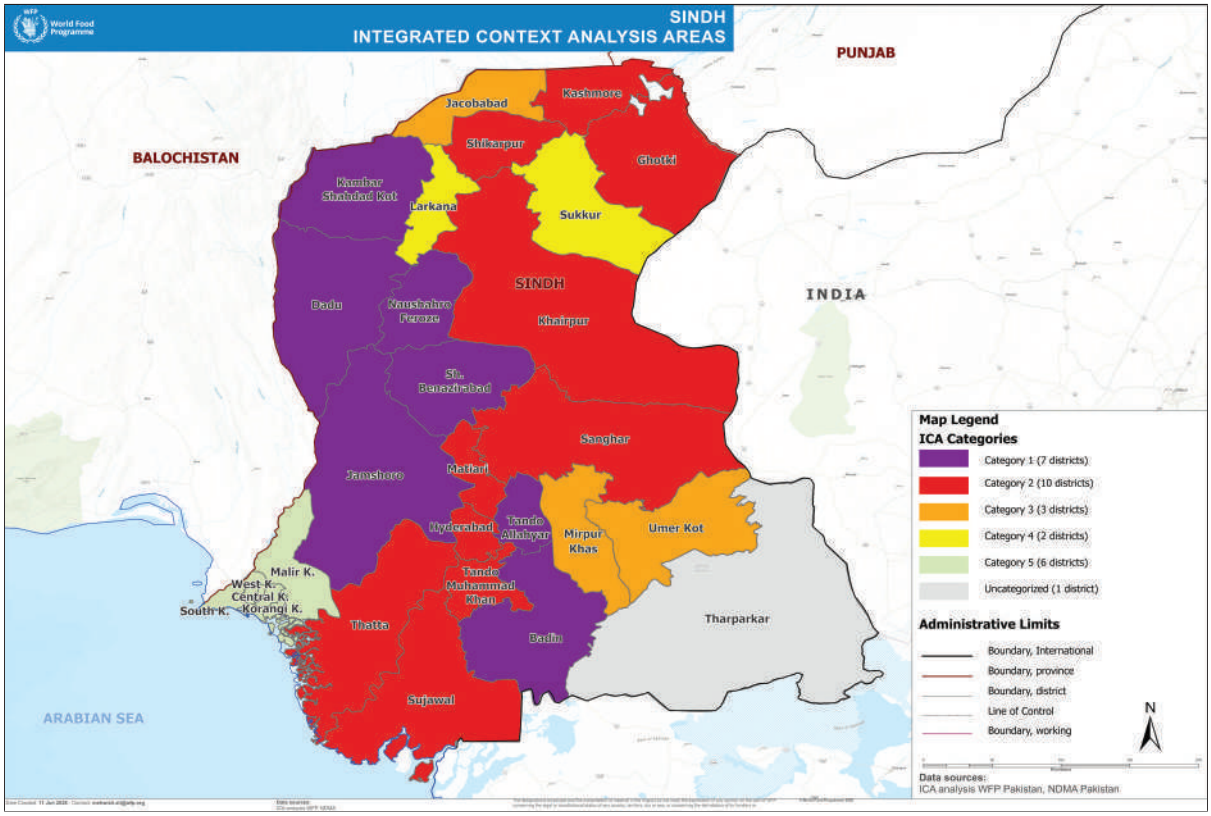
- In Punjab, **six districts** fall under category 1 for long term planning to address food insecurity. These include Bahawalpur, Bahawalnagar, Dera Ghazi Khan, Rahim Yar Khan, Muzaffargarh, and Leiah.
- **Three districts** are in **category 2** for programmes related to seasonal safety nets and post shock recovery. These include Khushab, Bhakkar and Rajanpur.
- **Nine districts** fall under **category 3** which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty. These include Gujranwala, Sheikhupura, Lahore, Kasur, Pakpattan, Vehari, Lodhran, Khanewal and Jhang.
- Eighteen **districts mainly** in north Punjab fall under **category 5** where there is a focus to build resilience in long term. These include Rawalpindi, Attock, Jhelum, Chakwal, Mianwali, Gujrat, Madi Bahauddin, Sargodha, Chiniot, Hafizabad, Sialkot, Narowal, Nankana Sahib, Faisalabad, Okara, Toba Tek Singh, Multan and Sahiwal.

4.1.2.4 Sindh

For Sindh, **riverine floods and droughts** are chosen as two main natural shocks to be used as core dimension for ICA analysis. The risk scores for these two hazards are sourced from risk scoring for hazards carried out by NDMA. Detailed methodology and combined hazard maps are provided in annex 6.1 and 6.2.

- In Sindh, **seven districts** fall under **category 1** for long term planning to address food insecurity. These include Kambar Shahdadkot, Dadu, Naushehro Feroze, Shaheed Benazirabad, Jamshoro, Badin and Tando Allah yar.
- **Ten districts** are in **category 2** for programmes related to seasonal safety nets and post shock recovery. These include Kashmore, Shikarpur, Ghotki, Khairpur, Sanghar, Matiari, Hyderabad, Tando Muhammad Khan, Thatta and Sujawal.
- **Three districts** fall under **category 3** which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty. These include Umerkot, Mirpur Khas, and Jacobabad.
- **Two districts** fall under **category 4** which suggests strengthening of early warning and preparedness measures. These include Larkana and Sukkur.
- **Six districts** are under **category 5** where there is a focus to build resilience in longer term. These include districts of Karachi division.
- **One district** of Tharparkar remains **uncategorized** due to data quality issues.

Figure 21: ICA categories Sindh (Map)



4.1.2.5 Azad Jammu & Kashmir (AJ&K)

For AJ&K, **rain induced floods and earthquakes** are chosen as two main natural shocks to be used as core dimension for ICA analysis. The risk scores for these two hazards are sourced from risk scoring for hazards carried out by NDMA. Detailed methodology and combined hazard maps are provided in annex 6.1 and 6.2.

- In AJ&K, **four districts** fall under **category 1** for long term planning to address food insecurity. These include Neelum, Jhelum valley, Muzaffarabad and Haveli.
- **Five districts** are in **category 2** for programmes related to seasonal safety nets and post shock recovery. These include Bagh, Poonch, Sudhnoti, Kotli and Mirpur.
- **One district Bhimber** falls under **category 3** which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty.

4.1.2.6 Gilgit Baltistan

For Gilgit Baltistan, **GLOF and flash floods** are chosen as two main natural shocks to be used as core dimension for ICA analysis. The risk scores for these two hazards are sourced from risk scoring for hazards carried out by NDMA. Detailed methodology and combined hazard maps are provided in annex 6.1 and 6.2.

- **In GB, four district** fall under **category 2** for programmes related to seasonal safety nets and post shock recovery. These include Nagar, Shigar, Ghanche and Kharmang.
- **Five districts** fall under category 4 which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty. These include Gilgit, Ghizer, Diamir, Astore and Hunza.
- **Five districts** remained uncategorized due to data limitations

Figure 22: ICA categories AJ&K (Map)

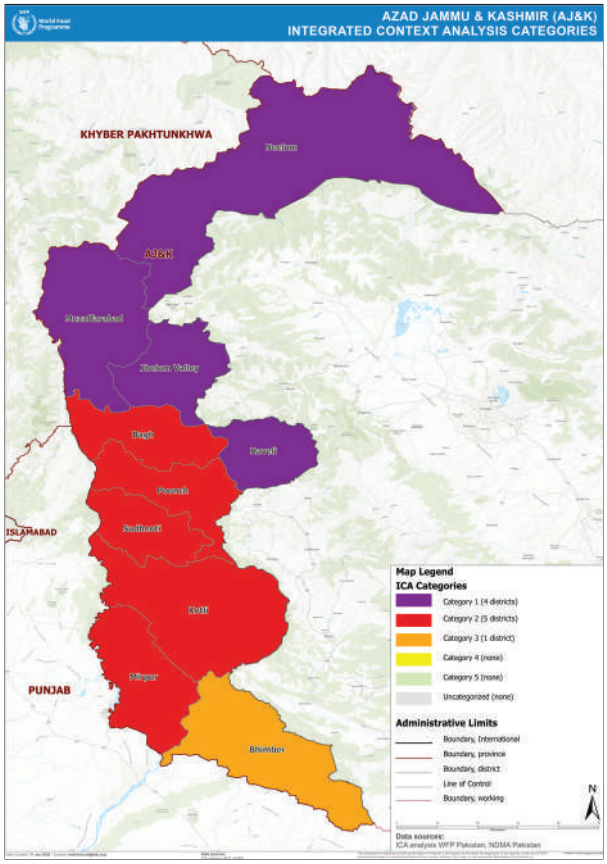
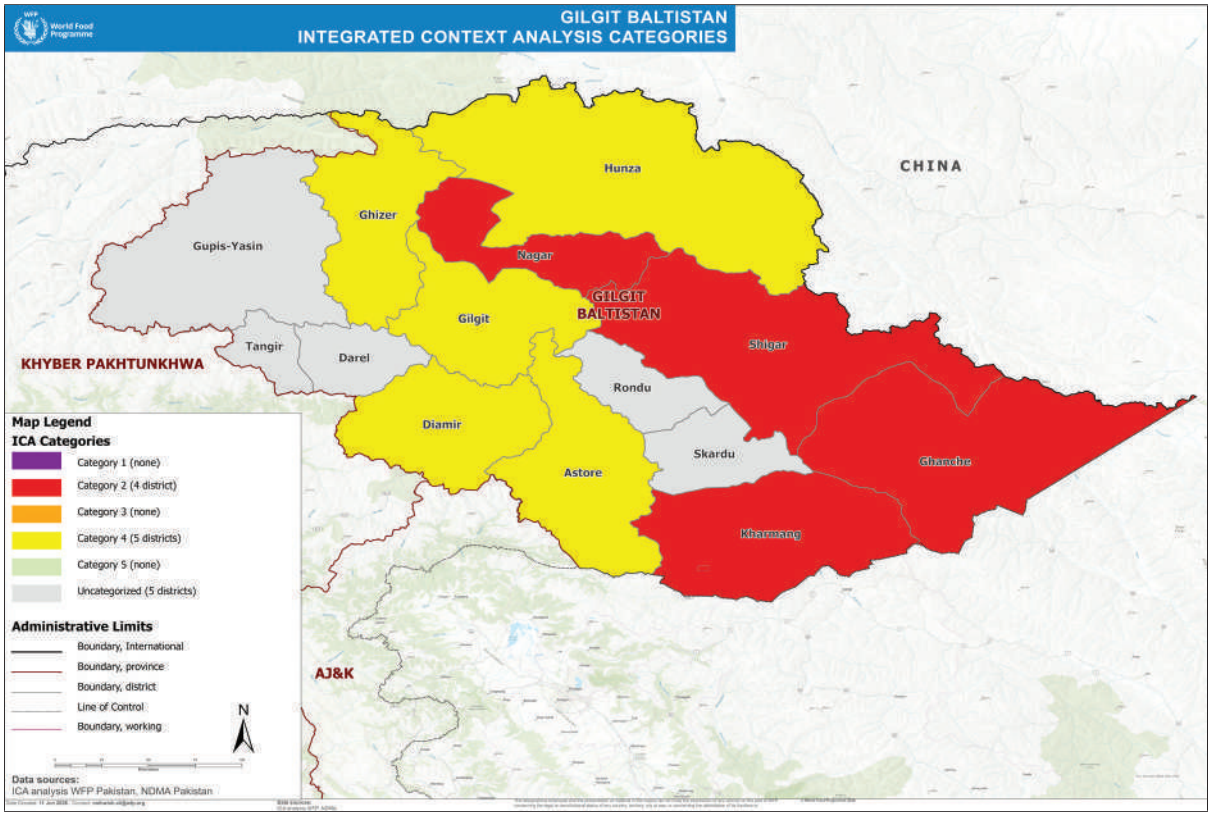


Figure 23:ICA categories GB (Map)



4.1.3 National Summary – ICA Categories

The following map presents the national summary of the ICA category classification, after combining province level categories.

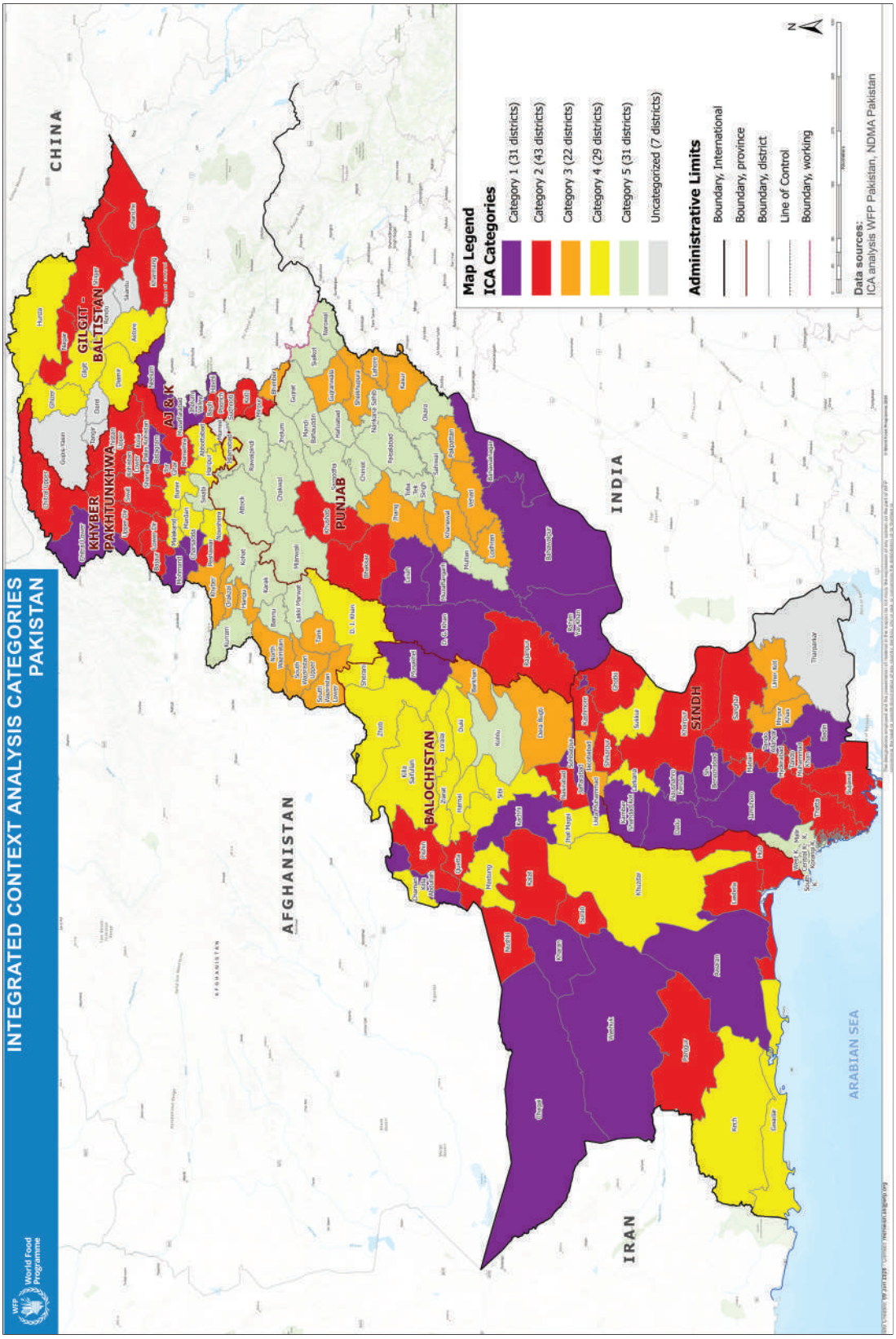


Figure 24: Integrated context analysis categories - Pakistan (Map)

Table 15: Summary of ICA findings

Districts in category 1 are primarily concentrated in southern Punjab, western Sindh, western Balochistan, northern AJ&K and KP. These are characterised by high recurrence of food insecurity coupled with high and medium natural hazards.
Category 2 for programmes related to seasonal safety nets and post shock recovery. Districts in category 2 are scattered throughout the country where recurrence of food insecurity is moderate and where natural shock hazards are high or medium.
Category 3, which implies that long term food insecurity may be due to other reasons other than climate induced shocks such as conflicts or poverty. These are characterized by high and moderate recurrence of food insecurity with relatively low natural hazards. These districts are concentrated in central Punjab and central parts of KP.
Category 4, which suggests strengthening of early warning and preparedness measures. These are characterized by low recurrence of food insecurity with medium and high natural hazards Districts in this category are mainly from northern and central parts of Balochistan, few parts in KP, Punjab and GB.
Category 5, where there is a focus to build effective early warning systems to trigger disaster preparedness measures. These are characterized by low recurrence of food insecurity and low natural hazards Districts in category 5 are mainly located in northern Punjab, and bordering parts of KP including Kohat, Karak, Swabi and Lakki Marwat in KP and Kohlu in Balochistan.

4.2 Additional Contextual Information

The table below summarises the additional contextual information mapped on top of ICA categorization, providing practical considerations to inform programme design and implementation.

Table 16: Additional contextual layer for ICA

Dimension	Indicator	Source and time span	Threshold
Core Lenses			
Chronic Malnutrition	Prevalence of chronic malnutrition (stunting rate among children under 5 year)	National Nutrition Survey (NNS) 2018	Low <10% Medium 10%-19.9% High 20%-29.9% Very high >=30%
Acute Malnutrition	Prevalence of acute malnutrition (wasting rate among children under 5 years)	National Nutrition Survey (NNS) 2018	Low <5% Medium 5%-9.9% High 10%-14.9% Very high >=15%.
Land Degradation	1) Land cover change (LCC);	Ministry of Climate Change's UNCCD report (Trends. Earth platform, ESA CCI land cover); Baseline: 2001-2015; Reporting: 2016-2019	Degraded land: 3.2% (reporting period) vs 7.3% (baseline); Improved productivity: 67,270 km²; SDG 15.3.1 indicator
Heatwave (Punjab & Sindh)	Heatwave Index (Section 4.2.1.5)	GCISC, MoCC 2025	Tmax >90th percentile baseline; ≥3 consecutive heat wave days; Composite Index: 0.4–0.6 (Moderate), 0.6–0.8 (High), >0.8 (Very High)
Additional Lenses			
Education	Literacy rate (%)	7th Population and Housing Census of Pakistan, PBS 2023	Low <42% Medium 42%-61%
Unemployment	Unemployment rate (%)	7th Population and Housing Census of Pakistan, PBS 2023	High > 17% Medium 10%-17%
Out of School Children	Proportion of Out of School Children (5-16 years)	7th Population and Housing Census of Pakistan, PBS 2023	High > 55% Medium 32%-55%
Small Holder Farmers	Distribution of small land holders	Agriculture Census 2024, PBS	
Area Under Cultivation	District wise area cultivated	Agriculture Census 2024, PBS	

Dimension	Indicator	Source and time span	Threshold
Contextual Lenses			
Land Cover	Land Cover	Land cover mapping for Pakistan by FAO in 2021	
Population	Persons per square kilometre Population Census 2023	Worldpop data 2021 7th Population and Housing Census of Pakistan, PBS	Population residing in 100 m pixel District level data
Population growth	Population growth rates	7th Population and Housing Census of Pakistan, PBS 2023	

4.2.1 Core Lenses

The maps and charts provide additional contextual information that can be used to add practical details to the programme these developed through other layers.

ICA Core Lenses provide information to refine broad programmatic strategies by overlaying each lens on top of the ICA Areas and Categories, to pinpoint areas where specific hazard needs to be addressed through specific programming. For example;

4.2.1.1 Prevalence of Chronic Malnutrition (Stunting rate Among Children Under 5 years)

Map 25 shows the districts with high and very high prevalence of stunting, overlaid with ICA categories. The coexistence of chronic malnutrition and elevated ICA risk categories highlights districts where the burden of stunting is particularly high and where nutrition specific and sensitive social protection interventions are most needed. It also underscore the importance of strengthening DRR measures and resilience building efforts within affected communities. Stunting prevention programmes should be reinforced and their coverage expanded in these priority districts to address the underlying drivers of chronic malnutrition and enhance households' capacity to withstand future shocks.

4.2.1.2 Prevalence of Acute Malnutrition (Wasting Rate Among Children Under 5 years)

Map 26 highlights districts with high and very high prevalence of wasting, overlaid with ICA categories. The spatial overlap of acute malnutrition and higher ICA risk categories helps identify priority districts where nutrition-sensitive social safety net interventions and disaster risk reduction (DRR) measures should be strengthened to enhance community resilience. These districts will need nutrition intervention, treatment of moderate and severe acutely malnourished (with and without complications) and also as part of facility based preparedness CMAM Surge approach.

Districts in ICA Categories 1 and 2 that also exhibit high stunting (>30%) and/or high wasting (>15%) should be prioritized for integrated nutrition-resilience programming. These interventions should combine nutrition-specific actions (CMAM and CMAM Surge, IYCF, micronutrient supplementation) with nutrition-sensitive interventions (climate-resilient livelihoods, social protection, WASH, school feeding, and women's empowerment) to address the underlying drivers of malnutrition.

Figure 25: ICA categories and prevalence of stunting (Map)

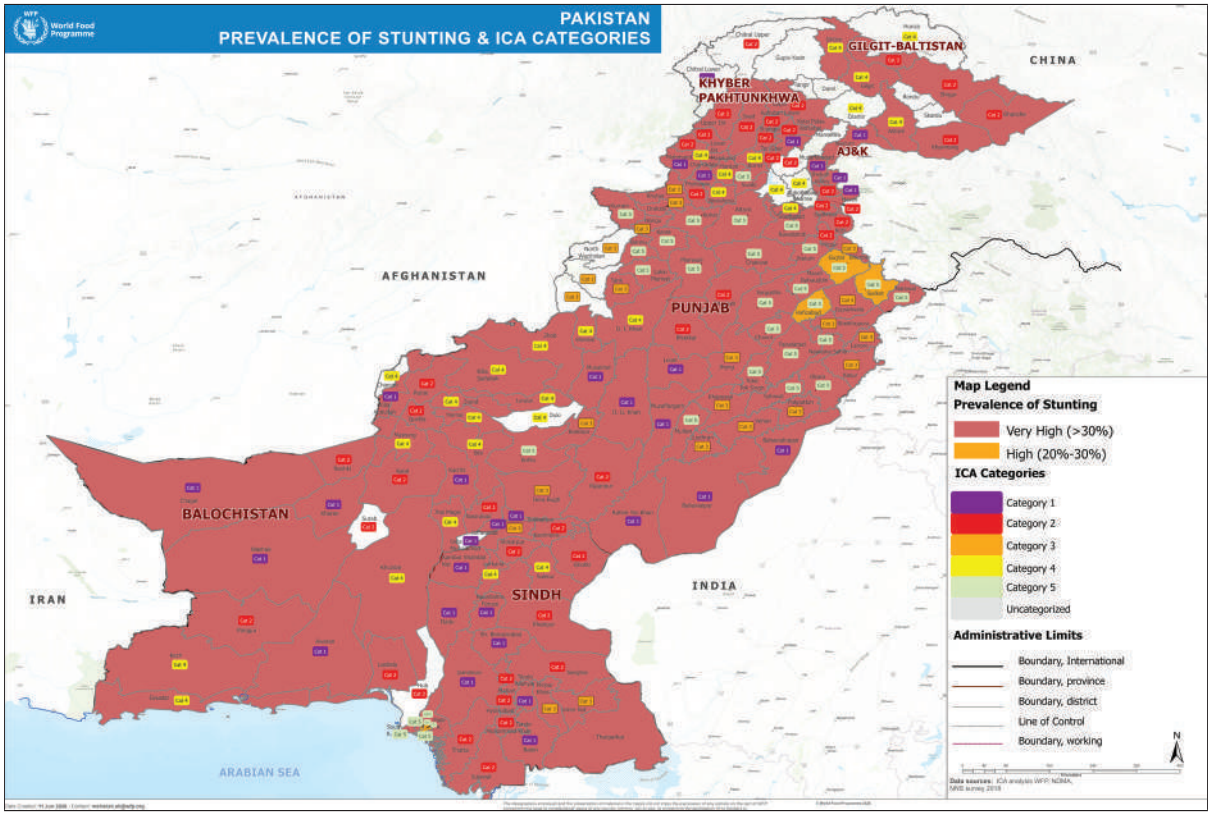
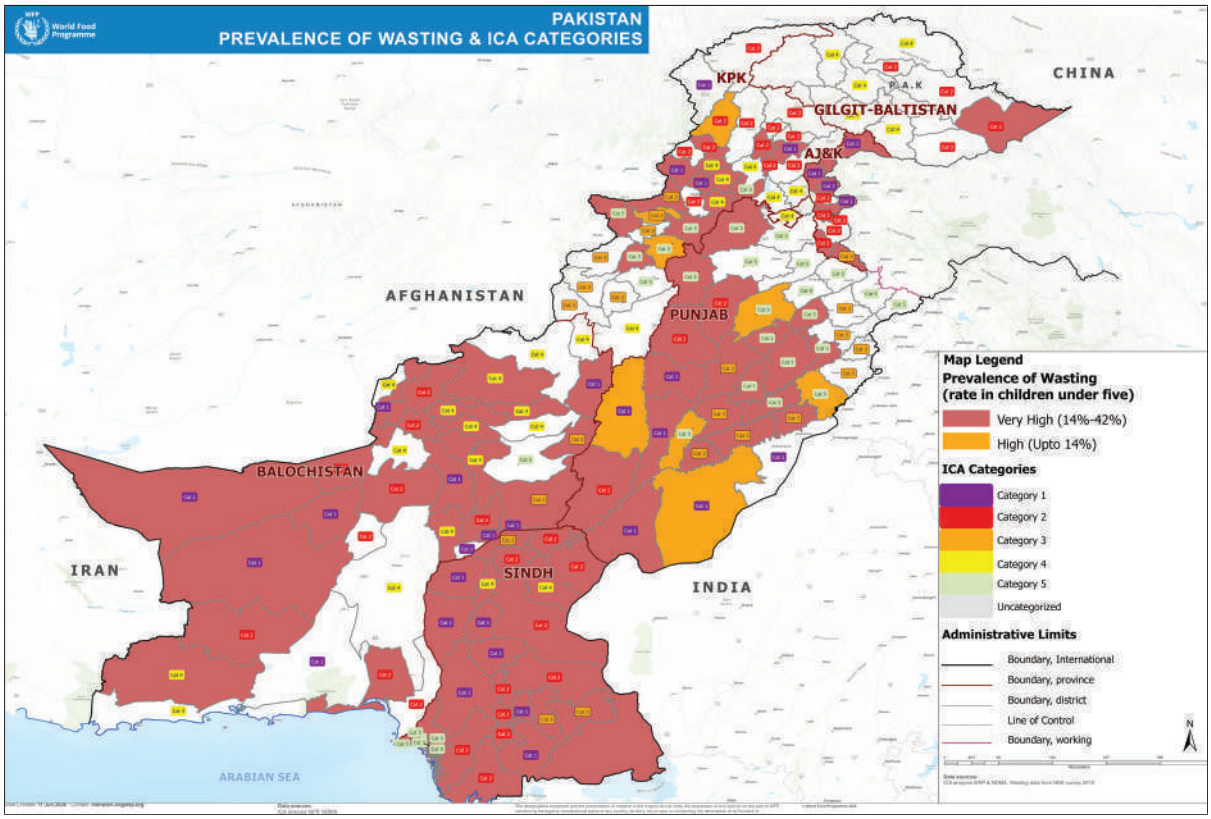


Figure 26: ICA categories and prevalence of wasting (Map)



4.2.1.3 Land Degradation

The 2023 report submitted by the Government of Pakistan to the United Nations Convention to Combat Desertification (UNCCD) shows that total 2.81 million hectares of land is degraded in Pakistan which makes 3.2% of the total land area. Reporting period of the report is 2019 while baseline was 2001-2015. According to the report, a population of **38.55 million** people exposed to land degradation during the reporting period. The below table shows the major land cover changes at national level being reported by Ministry of Climate Change.

The assessment reports that as of 2019, approximately 869,000 km² of land had stable land cover, while about 1,600 km² was classified as degraded. This improvement in the landcover conditions compared to the baseline period of 2001-2015 has been attributed to several large scale forest restoration and sustainable land management initiatives implemented across the country. These include, the Billion Tree Tsunami programme, launched in Khyber Pakhtunkhwa in 2024, under which one billion trees were planted and regenerated over an area of 6,000 km² of degraded forest lands and barren lands[9].

Table 17: Land cover changes Pakistan (2019)

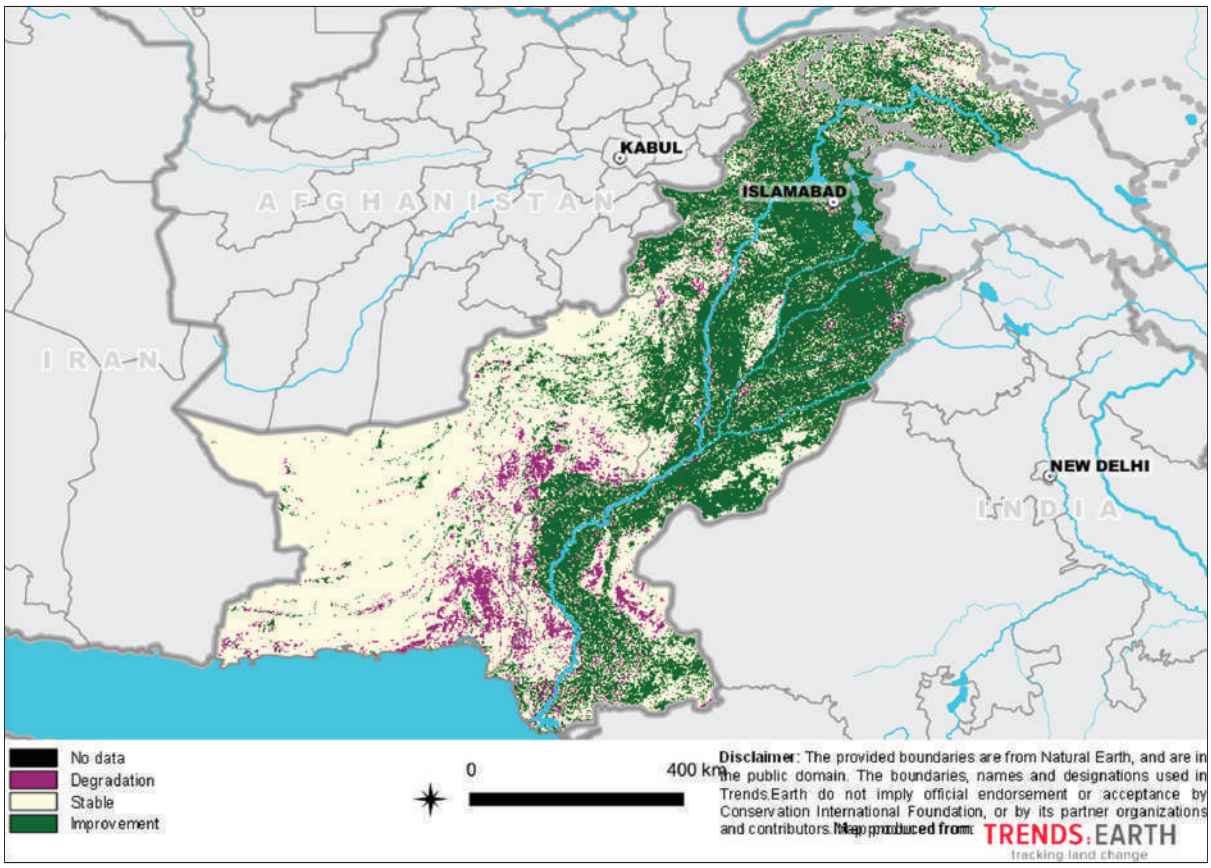
	Tree-covered areas (km²)	Grasslands (km²)	Croplands (km²)	Wetlands (km²)	Artificial surfaces (km²)	Other Lands (km²)	Water bodies (km²)	Total land area (km²)
Tree-covered areas (km²)	25,863	2	12	0	2	0	0	25,879
Grasslands (km²)	276	292,645	109	0	117	329	6	293,482
Croplands (km²)	436	265	288,397	0	697	66	12	289,873
Wetlands (km²)	0	0	0	8,310	8	0	0	8,318
Artificial surfaces (km²)	0	0	0	0	3,930	0	0	3,930
Other Lands (km²)	0	2015	19	0	14	242,205	0	224,253
Water bodies (km²)	0	0	0	9	0	0	7,191	7,200
Total	**26,575**	**294,927**	**288,537**	**8,319**	**4,768**	**242,600**	**7,209**	

Table 18: Land degradation results

	Area (km²)	Percent of total land area (%)
Land area with improved land cover	2,746	0.3
Land area with stable land cover	868,568	99.5
Land area with degraded land cover	1,622	0.2

9 (MoCC, 2023) accessible at UNCCD National Report 2022 PAK.pdf

Figure 27: Land degradation mapping for Pakistan 2019



Pakistan has made significant progress in addressing land degradation as evidenced by the UNCCD National Report 2022, which demonstrates substantial improvements in land cover, land productivity, and soil organic carbon status. The assessment methodology follows UNCCD reporting guidelines using the Trends.Earth platform with ESA CCI land cover maps and MODIS NDVI products for land productivity dynamics.

The analysis integrates three key indicators as per SDG Indicator 15.3.1: (1) Land cover changes using seven UNCCD land cover classes; (2) Land productivity dynamics computed from bi-weekly MODIS and AVHRR NDVI products; and (3) Soil organic carbon stocks in topsoil (0-30 cm) using SoilGrids 250m data. The assessment follows the one-out, all-out principle where a pixel is classified as degraded if any one of the three indicators shows degradation.

Key Findings

The proportion of degraded land decreased from 63,055 km² (7.3% of total land area) during the baseline period (2001-2015) to 28,118 km² (3.2%) in the reporting period (2016-2019), representing a reduction of approximately 34,937 km². This improvement is attributed to large-scale restoration initiatives including the Billion Tree Tsunami in Khyber Pakhtunkhwa (6,000 km²), mangrove restoration along the Sindh coast (1,000 km²), and various watershed management projects. Land area with improved productivity increased to 67,270 km², while degraded land productivity decreased from 56,473 km² (6.5%) to 10,972 km² (1.3%). Soil organic carbon stocks remained relatively stable with slight improvements, as degraded SOC area decreased from 6,006 km² to 5,634 km².

Land Degradation Hotspots

Two primary degradation hotspots have been identified requiring targeted intervention: (1) Riverine Forests in Sindh Province covering 240.36 km² along the Sindh Riverine Belt, with drivers including deforestation and habitat fragmentation; and (2) Subtropical broad-leaved (Scrub) Forest Zone in Islamabad Capital Territory covering 4.48 km², with direct

drivers including infrastructure development, urbanization, and mineral resource extraction.

Brightspots and Success Stories

Pakistan has achieved significant restoration success through: (1) Billion Tree Tsunami afforestation programme in Khyber Pakhtunkhwa covering 6,000 km² through block plantations, reforestation, and natural regeneration; and (2) Mangrove restoration along the Sindh coastal areas covering 1,000 km² around Keti Bandar, Shah Bandar, and Port Qasim.

Land Degradation Neutrality Targets

Pakistan has committed to Land Degradation Neutrality targets under the LDN Target Setting Programme with a total targeted area of 164,000 km², including: restoration of at least 30% of degraded forests (120,000 km²), rehabilitation of at least 5% of degraded cropland (11,000 km²), restoration of at least 6% of degraded rangelands (25,000 km²), and restoration of at least 10% of degraded wetlands (8,000 km²) by 2030.

4.2.1.4 Historical Heatwave Characteristics and Projected Trends for Punjab and Sindh

Methodology

A composite Heatwave Vulnerability Index is derived from normalized frequency, duration, and intensity components to ensure dimensional consistency and comparability. The assessment incorporates four key parameters that collectively characterize heat wave patterns and determine composite vulnerability scores

Heatwave Frequency Index (HWFI): The number of distinct heat wave events occurring within a given period, reflecting the recurrence of extreme heat and the frequency with which communities, ecosystems and infrastructure are exposed to thermal stress. Higher values indicate greater susceptibility to repeated heatwave conditions.

Heatwave Duration Index (HWDI): The total number of heatwave days across all events within a given period, representing cumulative exposure to extreme heat and its associated impacts on human health, livelihoods, and agriculture.

Heatwave Intensity Index (HWI): The average or maximum temperature exceedance above the established threshold during heat wave events, quantifying the severity of thermal stress that determines acute health impacts, infrastructure damage levels, and crop yield reduction magnitudes. Intensity values indicate the magnitude of deviation from normal conditions that triggers physiological stress responses in humans, livestock, and crops.

Composite Heat Wave Index: A composite Index derived by normalizing and equally weighting heatwave frequency, duration, and intensity to generate dimensionless score ranging from 0 to 1. Higher values indicate greater overall heatwave severity and vulnerability, reflecting the combined effects of recurring, prolonged and intense heatwave conditions.

Districts are classified into four tiers: low (0.0–0.4), moderate (0.4–0.6), high (0.6–0.8), and very high (>0.8) vulnerability. This approach ensures dimensional consistency and enables meaningful comparison across regions with differing heatwave characteristics, while individual parameter maps provide insight into the specific drivers of heatwave risk at the local scale.

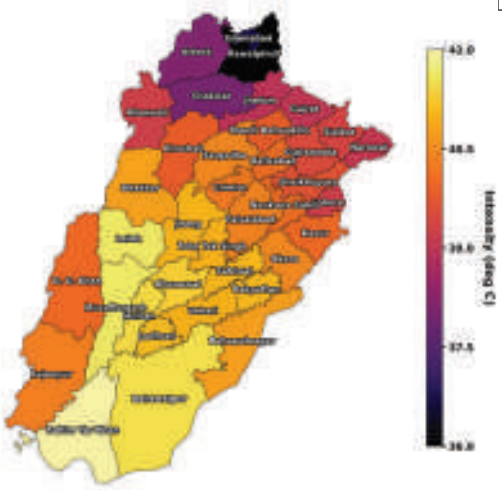
4.2.1.5 Punjab

Historical Analysis (1981-2010)

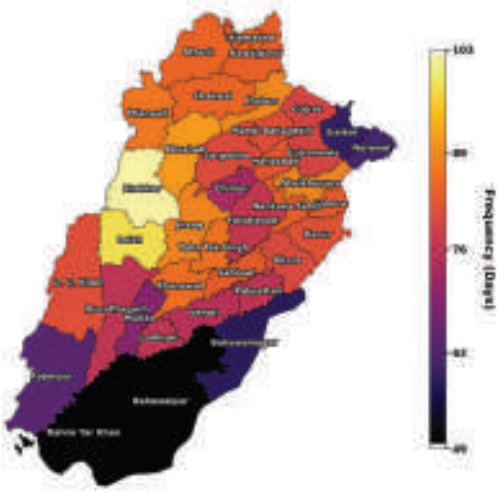
The district vulnerability ranking for the historical period (1981-2010) places Leiah at the top of the vulnerability scale, followed by Bhakkar, Jhang, and Toba Tek Singh in the very high vulnerability category. Khushab, Sahiwal, Khanewal, Nankana Sahib, Sargodha, and Hafizabad complete the top 10 most vulnerable districts, with these central Punjab districts exhibiting the most pronounced combined frequency, duration, and intensity characteristics. This ranking reflects the integrated assessment of all three heat wave parameters and establishes the baseline against which future projections are compared.

Figure 28: a) Heatwave intensity b) Frequency c) Duration d) Composite Index and e) map and table of district's vulnerability ranking and Top 10 most vulnerable districts of Punjab province (1981-2010)

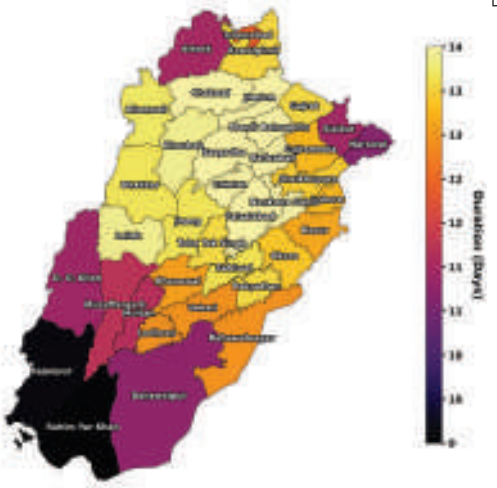
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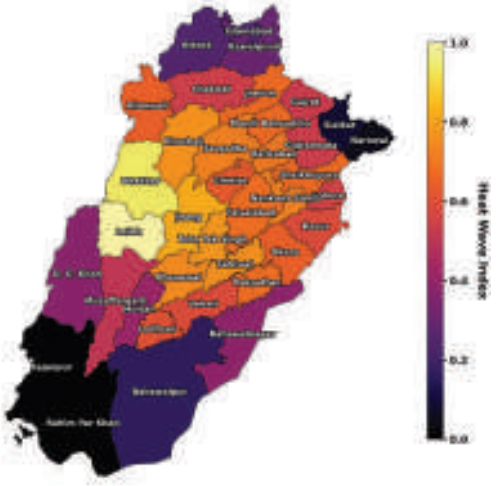
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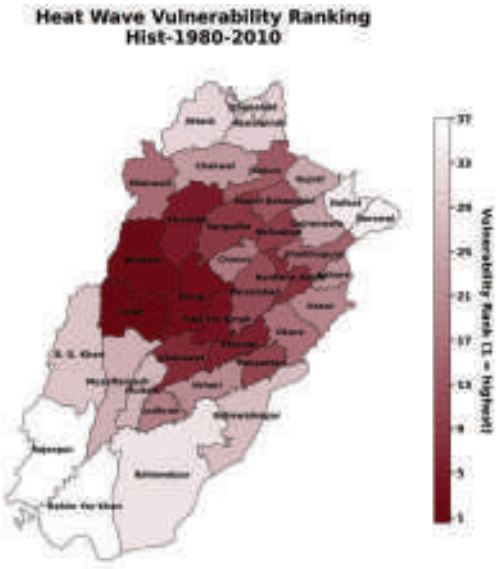
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Hist-1980-2010

District	Rank
Leiah	1
Bhakkar	2
Jhang	3
Toba Tek Singh	4
Khushab	5
Sahiwal	6
Khanewal	7
Nankana Sahib	8
Sargodha	9
Hafizabad	10



Future Projections Analysis (2031-2050)

Heatwaves projections for the 2031-2050 were developed using two IPCC Shared Socio-Economic Pathway (SSP) scenarios to assess future heatwave vulnerability under different emissions and development trajectories. The SSP245 scenario represents a moderate pathway with intermediate mitigation efforts, while the SSP585 scenario represents a high-emission trajectory corresponding to continued fossil fuel dependence and limited climate action.

SSP245 Scenario (Moderate Emissions Trajectory)

Under the moderate emissions trajectory, significant shifts in heatwave vulnerability are projected relative to the historical baseline, reflecting a spatial redistribution of heat wave risk across Punjab. Bahawalpur emerges as the most vulnerable district followed by Rahim Yar Khan and Bahawalnagar, indicating an increasing concentration of extreme vulnerability in southern Punjab. The top ten rankings also demonstrate notable changes from historical patterns, with Vehari, Pakpattan, Lodhran, and Rajanpur entering the highest vulnerability tier for the first time.

Projected heat wave intensity increases are particularly pronounced across southern Punjab, with peak temperature exceedances exceeding historical maximums by 2–4°C in some districts. Heatwave Frequency is also expected to rise with Muzaffargarh, Multan, and Lodhran showing the highest projected number of events under SSP245. In addition, heatwave durations are projected to increase by 15–25% compared to baseline conditions, , resulting in longer periods of cumulative heat exposure and heightened risks to human health, water resources, and agricultural productivity.

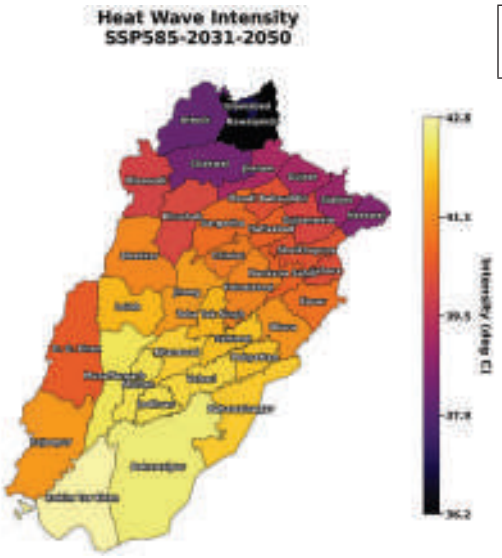
SSP585 Scenario (High Emissions Trajectory)

Under the SSP585 scenario, heatwave vulnerability increases sharply across Punjab, with all indicators showing substantial deterioration compared to historical conditions and SSP245 projections. Bahawalpur and Rahim Yar Khan remain the most vulnerable districts, followed by Bahawalnagar, Lodhran, Vehari, Rajanpur, Multan, Muzaffargarh, Khanewal, and Pakpattan.

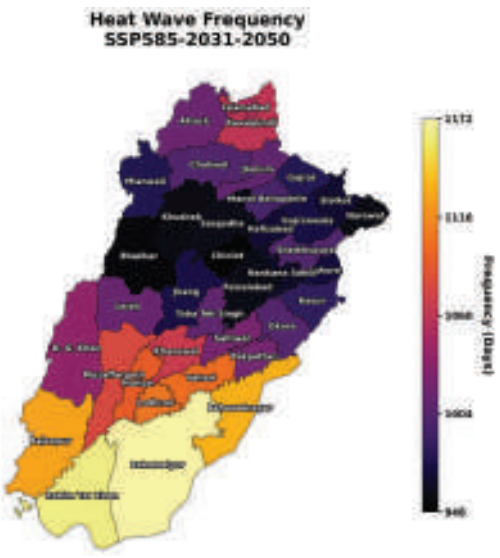
By mid-century, southern Punjab is projected to experience heatwave temperatures exceeding historical thresholds by 4-6°C more frequently, with event durations increasing by 30-50%. The geographic extent of extreme vulnerability also expands, with districts such as Layyah moving into the highest-risk category. Overall, southern desert-adjacent regions could face heatwave conditions up to three times more severe than historical levels, highlighting the urgent need for climate-resilient planning, infrastructure adaptation, and strengthened public health preparedness.

Figure 29: a) Heat wave intensity b) Frequency c) Duration d) Composite Index and e) map and table of district's vulnerability ranking and Top 10 most vulnerable districts of Punjab province (SSP585: 2031-2050)

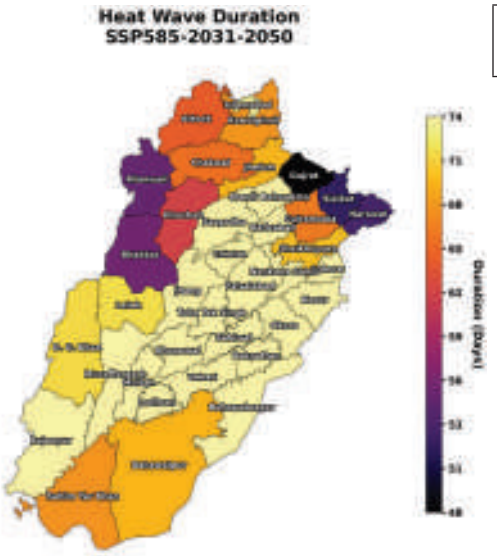
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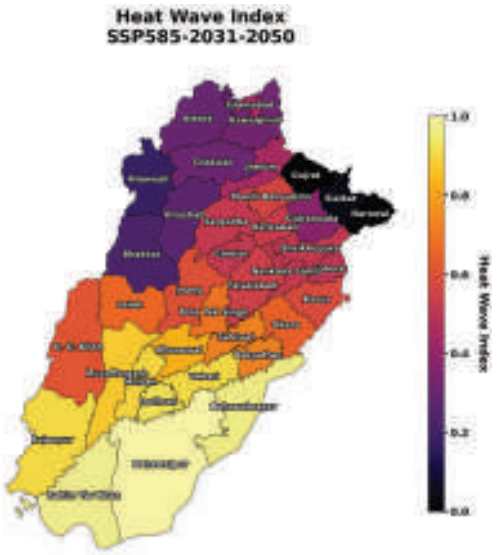
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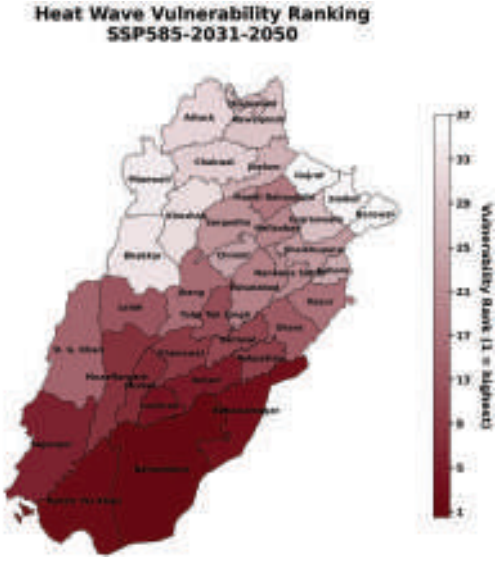
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e

SSP585-2031-2050

District	Rank
Bahawalpur	1
Rahim Yar Khan	2
Bahawalnagar	3
Lodhran	4
Vehari	5
Rajanpur	6
Multan	7
Muzaffargarh	8
Khanewal	9
Pakpattan	10



4.2.1.6 Sindh

Historical Analysis (1981-2010)

The historical analysis shows that heatwave vulnerability in Sindh is concentrated in eastern and central districts due to desert influence and prolonged heat exposure. Eastern districts such as Jacobabad, Larkana, and Shikarpur experienced the highest heatwave intensity, while Tharparkar, Umerkot, and Mirpurkhas recorded the highest event frequency. Central districts, particularly Qambar Shahdadkot, Tharparkar, and Larkana, experienced the longest heatwaves, averaging 11-13 days per event.

Based on the combined effects of intensity, frequency, and duration, Qambar Shahdadkot ranked as the most vulnerable district, followed by Tharparkar, Larkana, Jacobabad, Shikarpur, Khairpur, Naushehro Feroze, Umerkot, Kashmore, and Thatta, establishing central and eastern Sindh as the province's primary heatwave hotspots during the baseline period.

SSP585 Scenario (High Emissions Trajectory)

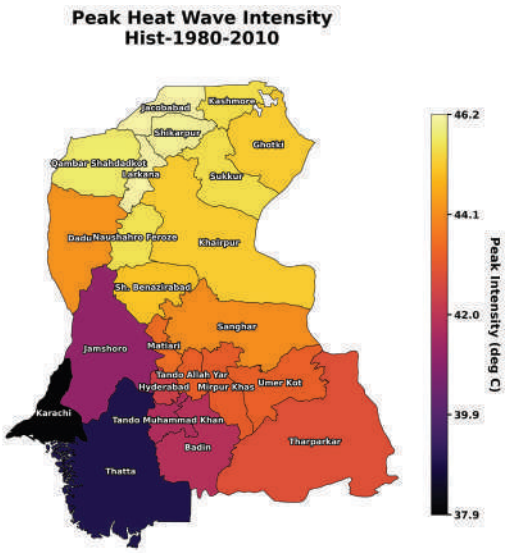
Under the SSP585 scenario, heatwave vulnerability rises sharply across Sindh, with all indicators worsening compared to historical conditions and SSP245 projections. Thatta, Badin and Tando Muhammad Khan emerge as the most vulnerable districts, followed Mirpur Khas, Shaheed Benazirabad, Naushehro Feroze, and Larkana.

By mid-century, eastern Sindh is projected to experience more frequent, intense, and prolonged heatwaves, with vulnerability expanding across a much larger geographic area. Overall, heatwave conditions in eastern Sindh could become up to three times more severe than historical levels, highlighting the urgent need for climate adaptation, resilient infrastructure, and strengthened public health systems.

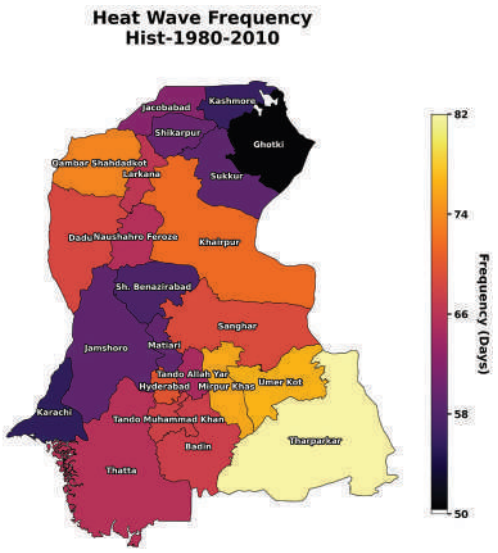


Figure 30: a) Heat wave intensity b) Frequency c) Duration d) Composite Index and e) map and table of district's vulnerability ranking and Top 10 most vulnerable districts of Sindh province (1981-2010)

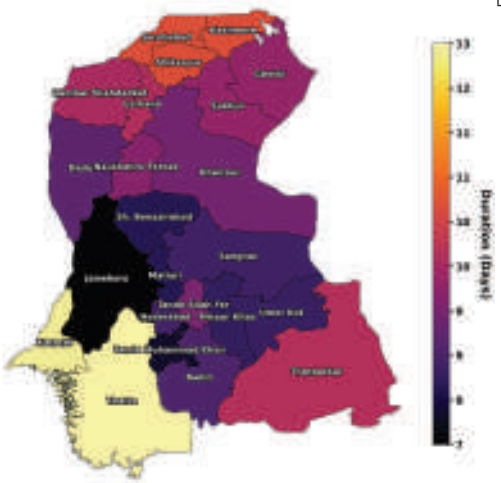
a



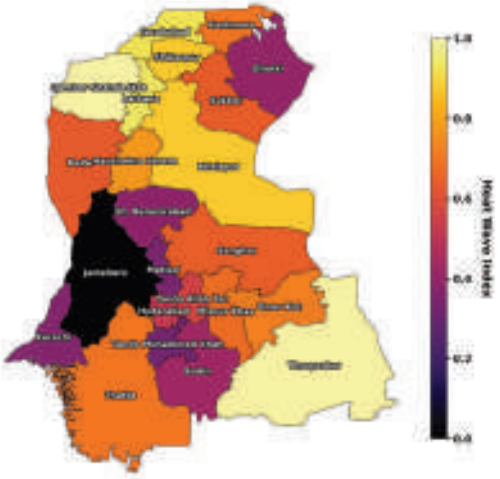
b



c



d



e

Hist-1980-2010

District	Rank
Qambar Shahdadkot	1
Tharparkar	2
Larkana	3
Jacobabad	4
Shikarpur	5
Khairpur	6
Naushahro Feroze	7
Umer Kot	8
Kashmore	9
Thatta	10

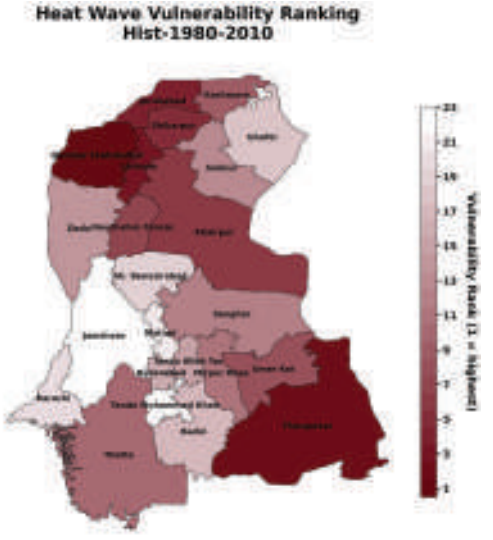
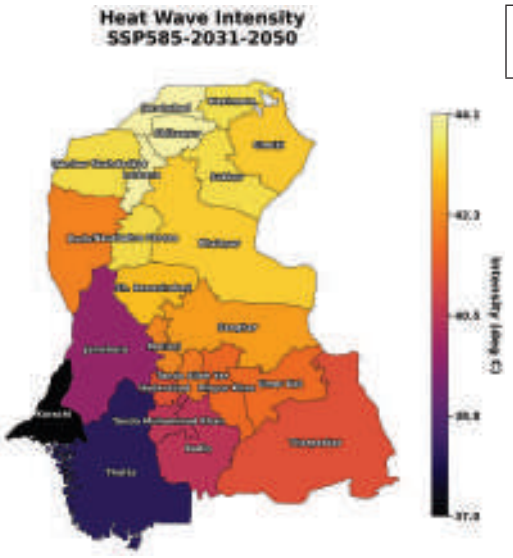
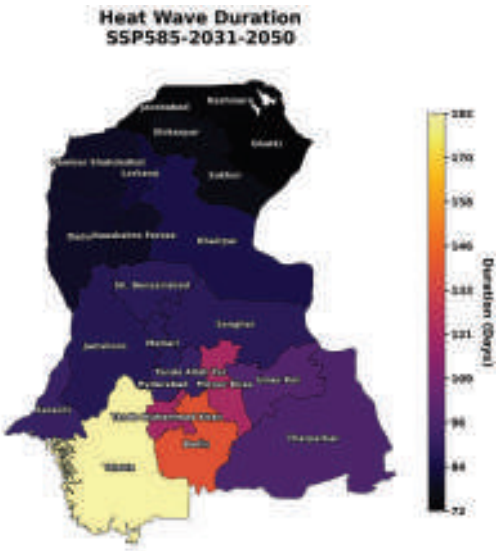


Figure 31: a) Heat wave intensity, b) Frequency, c) Duration, d) Composite Index and e) map and table of district vulnerability ranking and Top 10 most vulnerable districts of Sindh province (SSP585: 2031-2050)

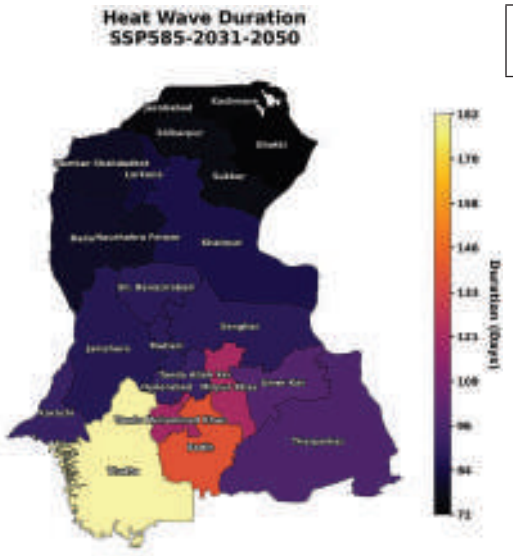
a



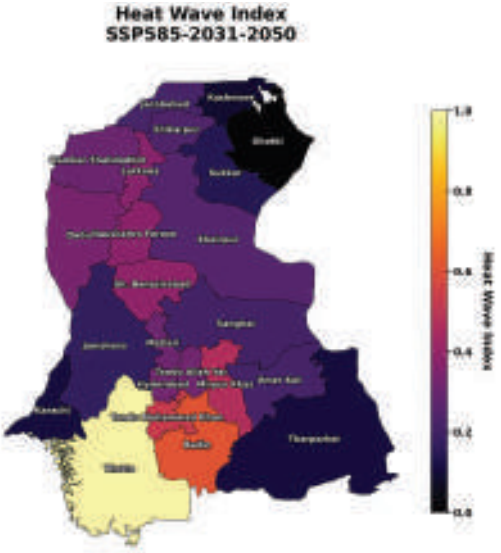
b



c



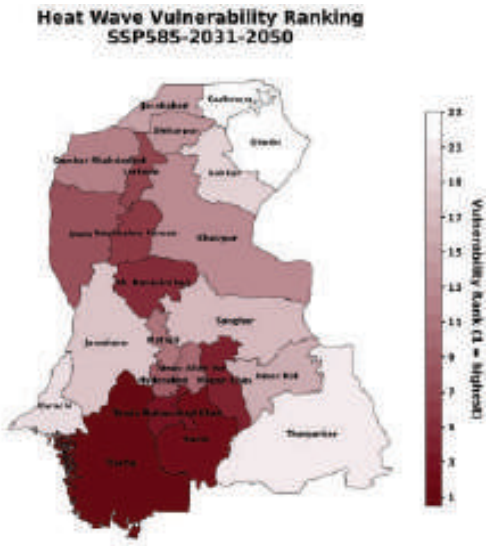
d



e

SSP585-2031-2050

District	Rank
Thatta	1
Badin	2
Tando Muhammad Khan	3
Mirpur Khas	4
Sh. Benazirabad	5
Naushahro Feroze	6
Larkana	7
Dadu	8
Hyderabad	9
Tando Allah Yar	10



4.2.1.7 Heatwave Projections and ICA Categories

For Punjab, the highest projected heatwave vulnerability in Punjab is concentrated in the southern and south-western districts, including Bahawalpur, Rahim Yar Khan, Rajanpur, D.G. Khan, Muzaffargarh, Bahawalnagar, Vehari, and Lodhran. Several of these districts are already classified under ICA Categories 1 and 2, indicating a higher recurrence of food insecurity and existing exposure to shocks and hazards. The projected increase in heatwave intensity is likely to further aggravate food security challenges through increased water stress, more frequent drought conditions, reduced agricultural productivity, livestock losses, and worsening socio-economic vulnerabilities. Consequently, populations in these districts may face greater risks to livelihoods and food security.

In particular, Bahawalpur, Rahim Yar Khan, D.G. Khan, Muzaffargarh, Leiah, and Bahawalnagar, which fall under ICA Category 1, are projected to experience moderate to high heatwave vulnerability. Similarly, Rajanpur, Bhakkar, and Khushab, categorized under ICA Category 2, face heightened climate-related risks that could compound existing vulnerabilities. The convergence of high heat exposure and underlying food insecurity in these districts suggests a greater likelihood of adverse impacts on agricultural production, income sources, and household resilience, potentially leading to an increase in the food-insecure population.

In Sindh, several districts projected to have the highest vulnerability to heatwaves also fall under ICA Category 2, where the recurrence of food insecurity and exposure to natural hazards are already significant. The projected increase in heatwave vulnerability is expected to further exacerbate existing risks and could lead to a rise in the food-insecure population through more frequent droughts, increased water scarcity, reduced agricultural productivity, and underlying socio-economic vulnerabilities. Districts such as Shaheed Benazirabad, Dadu, and Naushahro Feroze, which are classified under ICA Category 1, are also projected to face heightened heatwave vulnerability. This is likely to have adverse impacts on livelihoods and food security, further increasing the vulnerability of populations residing in these districts.

Figure 32: Projected heatwave index and ICA categories Punjab (Map)

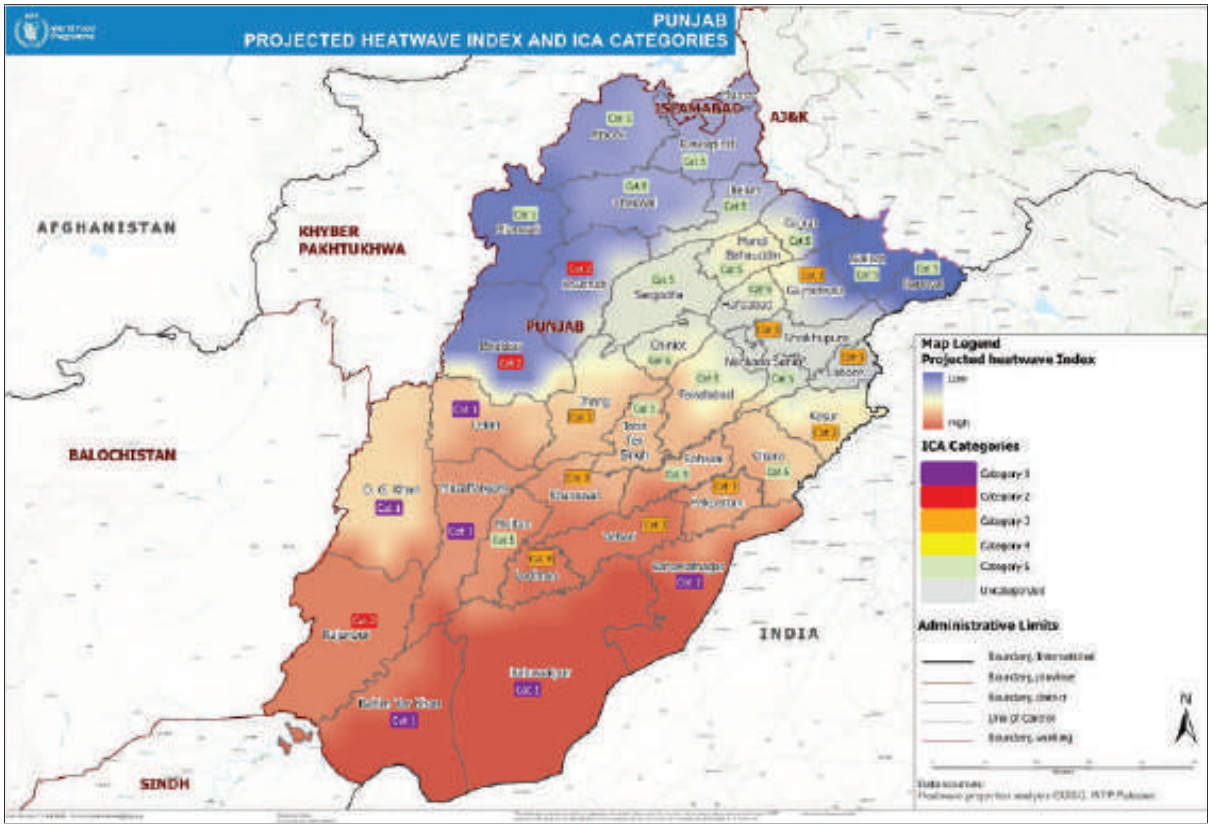
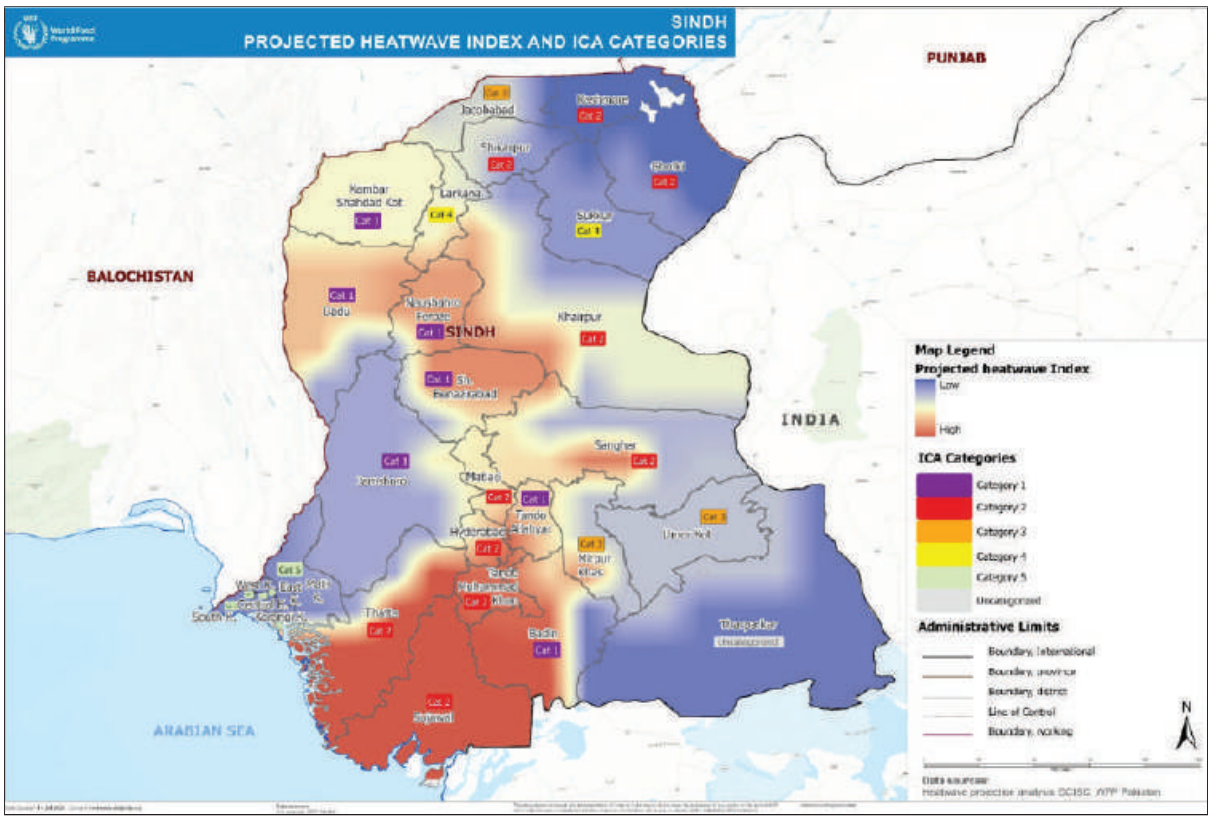


Figure 33: Projected heatwave index and ICA categories Sindh (Map)



4.2.2 Additional Lenses

4.2.2.1 Literacy Rate

The spatial overlay does not indicate a strong one-to-one relationship between literacy rates and ICA categories. Both low- and medium-literacy districts are distributed across the full range of ICA categories, suggesting that literacy alone is not a primary determinant of vulnerability. Instead, geographic patterns show that districts in Balochistan, interior Sindh, and parts of Khyber Pakhtunkhwa tend to fall in higher-vulnerability ICA categories regardless of literacy status, while many Punjab districts exhibit lower vulnerability despite varying literacy levels. This indicates that broader socioeconomic, livelihood, and environmental factors likely play a more influential role in determining ICA outcomes than literacy rates alone.

4.2.2.2 Unemployment Rate

The strongest association between high unemployment and vulnerable ICA categories is observed in Sindh and Balochistan, where districts with limited economic opportunities and constrained livelihood options are predominantly classified in ICA Categories 1 and 2. In contrast, this relationship is less pronounced in Punjab, where some districts maintain relatively lower vulnerability despite moderate unemployment levels, reflecting the influence of stronger market connectivity, infrastructure, and livelihood diversification. Overall, the findings indicate that unemployment acts as a contributing factor rather than a standalone determinant of vulnerability, interacting with broader socioeconomic, geographic, and livelihood conditions to shape ICA outcomes.

Figure 34: ICA categories and literacy rate (%) (Map)

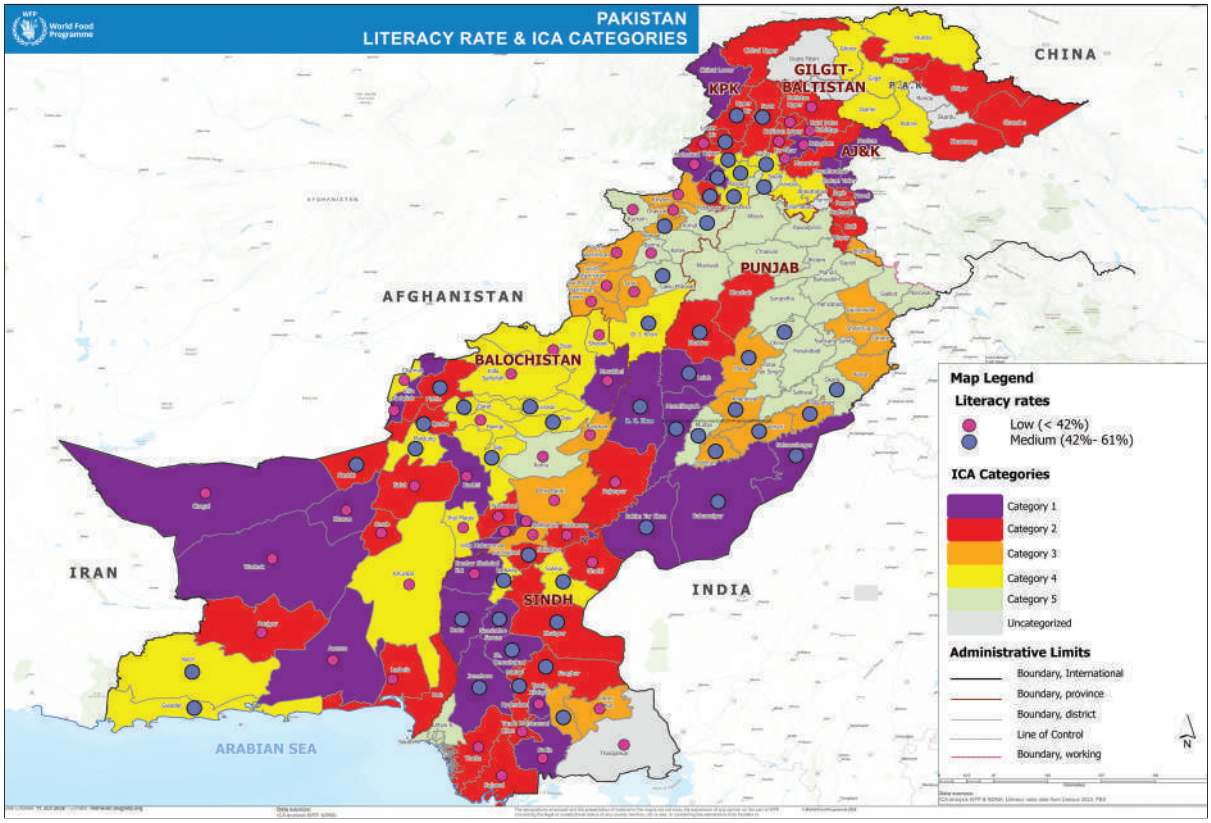
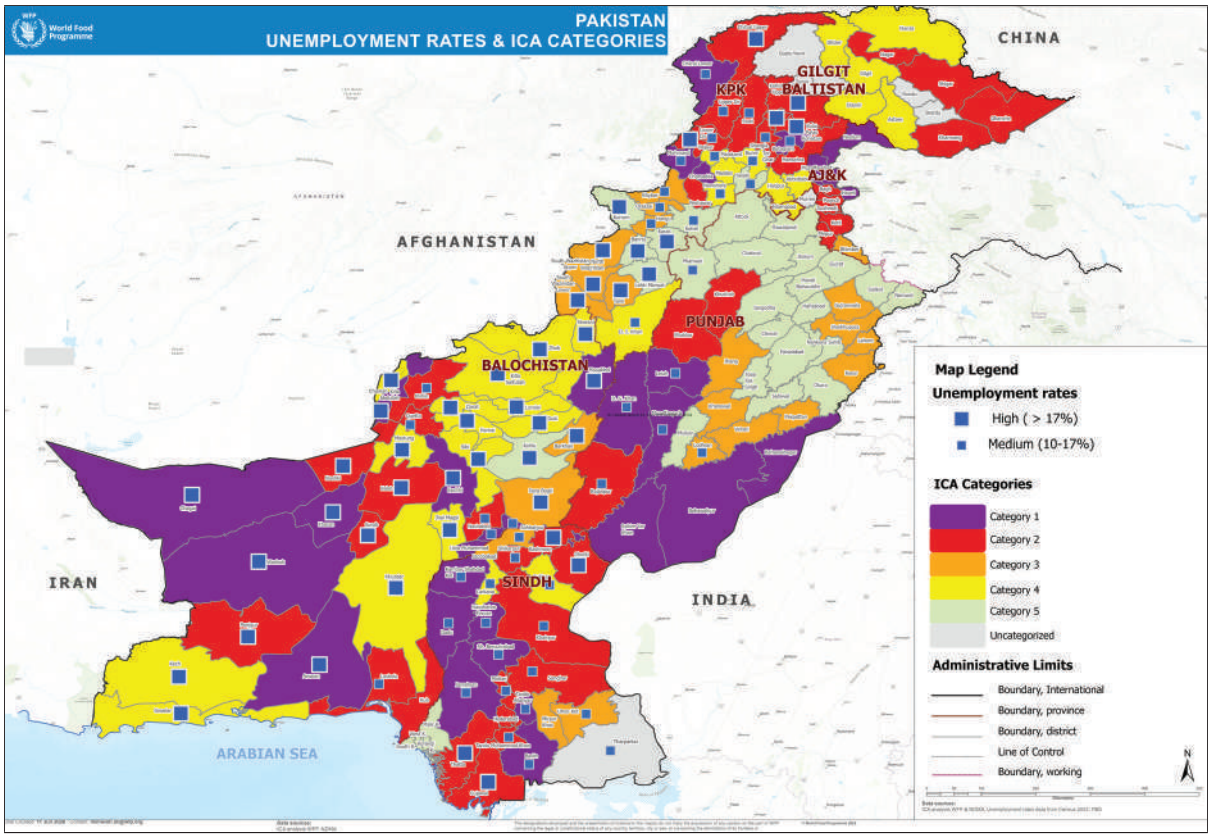


Figure 35: ICA categories and unemployment rates (Map)



4.2.2.3 Out of School Children

The overlay analysis indicates a relatively strong association between the proportion of out-of-school children and ICA categories. Districts with high levels of school exclusion are concentrated predominantly within ICA Categories 1 and 2, particularly across Sindh, Balochistan, and parts of Khyber Pakhtunkhwa. This suggests that limited access to education often coincides with broader socioeconomic and livelihood vulnerabilities. However, the relationship is not uniform, as some districts in Khyber Pakhtunkhwa and Balochistan exhibit moderate-to-high proportions of out-of-school children while falling within lower or moderate vulnerability ICA categories. This indicates that educational deprivation alone does not determine vulnerability levels and that other factors, including livelihood opportunities, geographic conditions, market access, and service availability, also influence ICA outcomes. Overall, the findings suggest that out-of-school children constitute a strong indicator of underlying deprivation and vulnerability, although their effects are moderated by the broader socioeconomic and geographic context captured within the ICA framework.

4.2.2.4 Distribution of Small Land Holders and Area ICA Categories

The spatial analysis reveals no strong direct association between the distribution of smallholder farmers and ICA categories. As small farms (<12.5 acres) constitute approximately 95% of all farms in Pakistan, they are prevalent across districts regardless of vulnerability status. While many smallholder-dominated districts in Sindh and Balochistan fall within ICA Categories 1 and 2, similar farming structures in Punjab are often associated with Categories 4 and 5. This suggests that vulnerability is influenced less by farm size itself and more by factors such as market access, irrigation, infrastructure, livelihood diversification, and exposure to climatic and economic shocks.

Map 38 shows the district wise variation in area under cultivation along with the ICA categories to understand the current agricultural activities in areas of high concern to address food insecurity.

Area under cultivation appears to have some level of association with ICA categories than smallholder farmer concentration, but vulnerability depends not only on how much land is cultivated, but also on how effectively that land supports resilient livelihoods.



Figure 36: ICA categories and proportion of out of school children (Map)

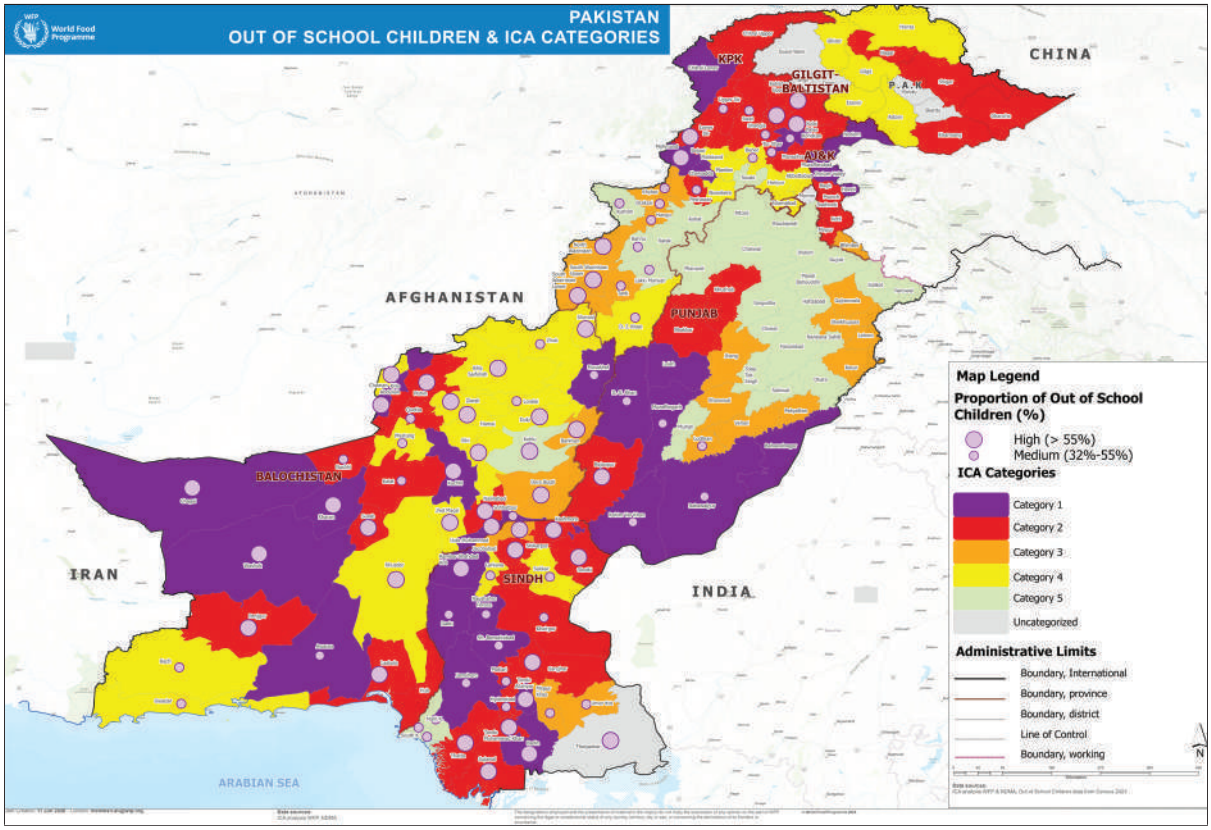


Figure 37: ICA categories and distribution of small holder farmers (Map)

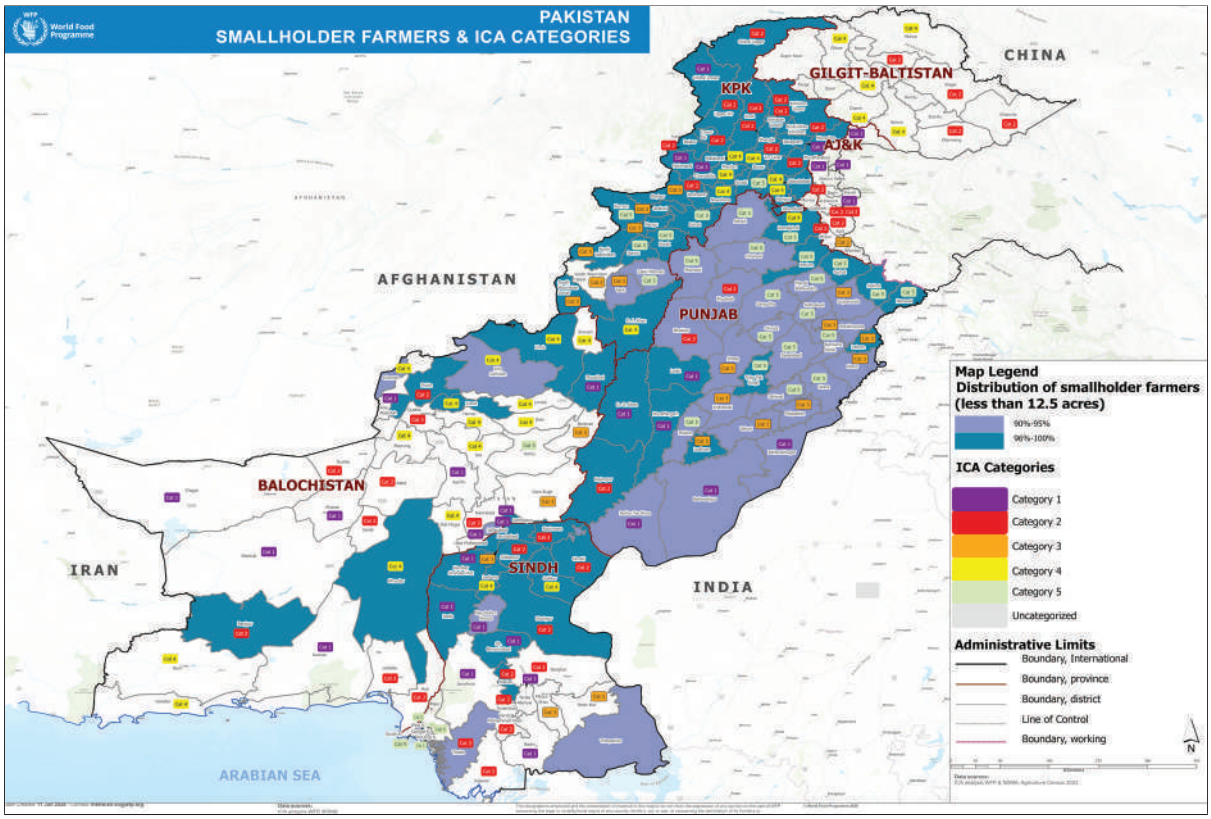
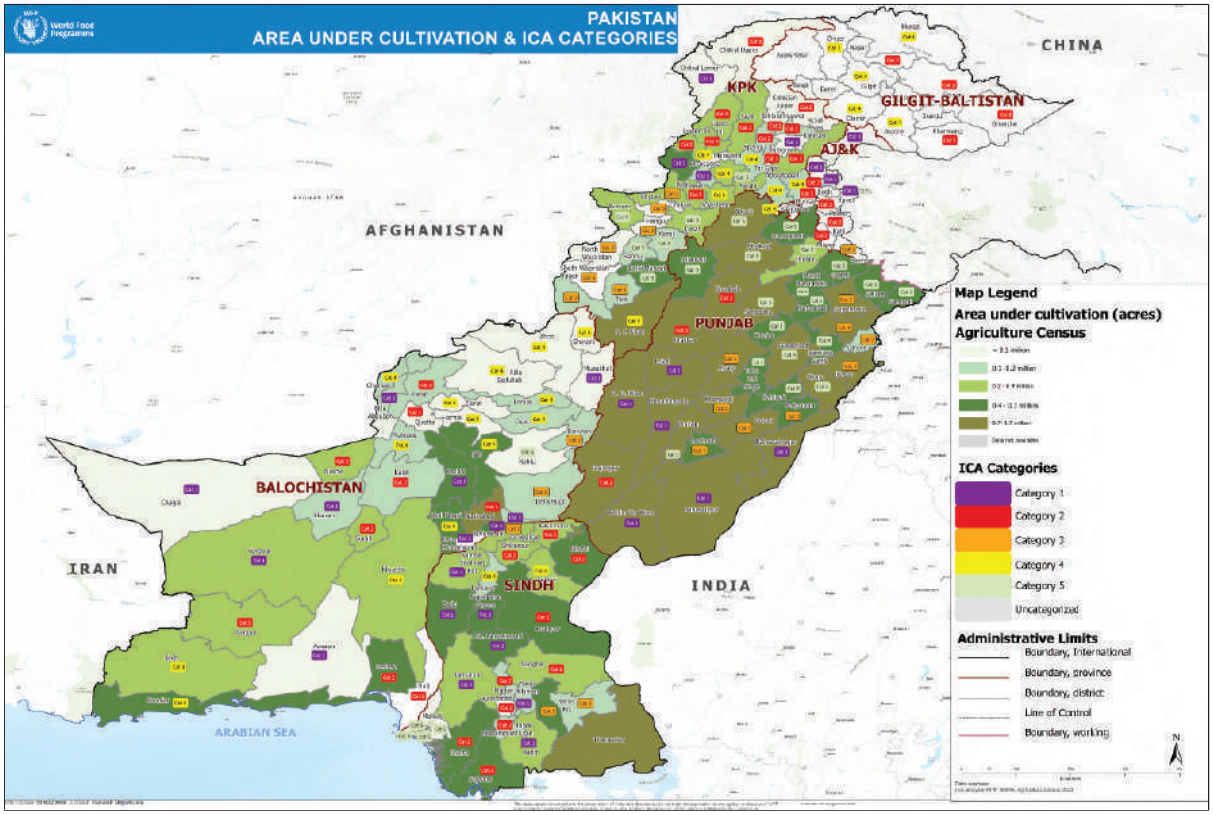


Figure 38: ICA categories and area under cultivation (Map)



4.2.3 Contextual Lenses

4.2.3.1 Population

According to 7th Population and Housing Census of Pakistan carried out by Pakistan Bureau of Statistics in 2023, the total population of the country is 241,499,431.

The map 39 presents the spatial distribution of population across Pakistan by showing population density per square kilometres from WorldPop 2021 data. The population density alongside ICA categories helps understand the population distribution and prioritizing Categories 1 and 2 areas with higher population densities for long term planning.

4.2.3.2 Land Cover and ICA Categories

The land cover analysis are sourced from the land cover classification developed by FAO Pakistan in 2021[10].

The overlay analysis with ICA Categories reveals a strong association between land cover patterns and ICA categories. Districts dominated by irrigated croplands and productive agricultural landscapes, particularly across the Indus Basin of Punjab, are generally concentrated in ICA Categories 4 and 5, indicating relatively lower vulnerability. Conversely, districts characterized by shrublands, sparse vegetation, bare soils, and desert ecosystems, especially in Balochistan, Tharparkar, and parts of southern Sindh, are more frequently represented in Categories 1 and 2. However, the relationship is not uniform. Several districts in Sindh remain highly vulnerable despite extensive agricultural land, while many northern districts exhibit elevated vulnerability due to remoteness and terrain-related constraints rather than land cover alone. Overall, the findings suggest that land cover is an important determinant of vulnerability, but its influence is mediated by irrigation access, market connectivity, livelihood opportunities, exposure to climatic shocks, and broader socioeconomic conditions.

10 (FAO, 2020)

Figure 39: ICA categories and population density (Map)

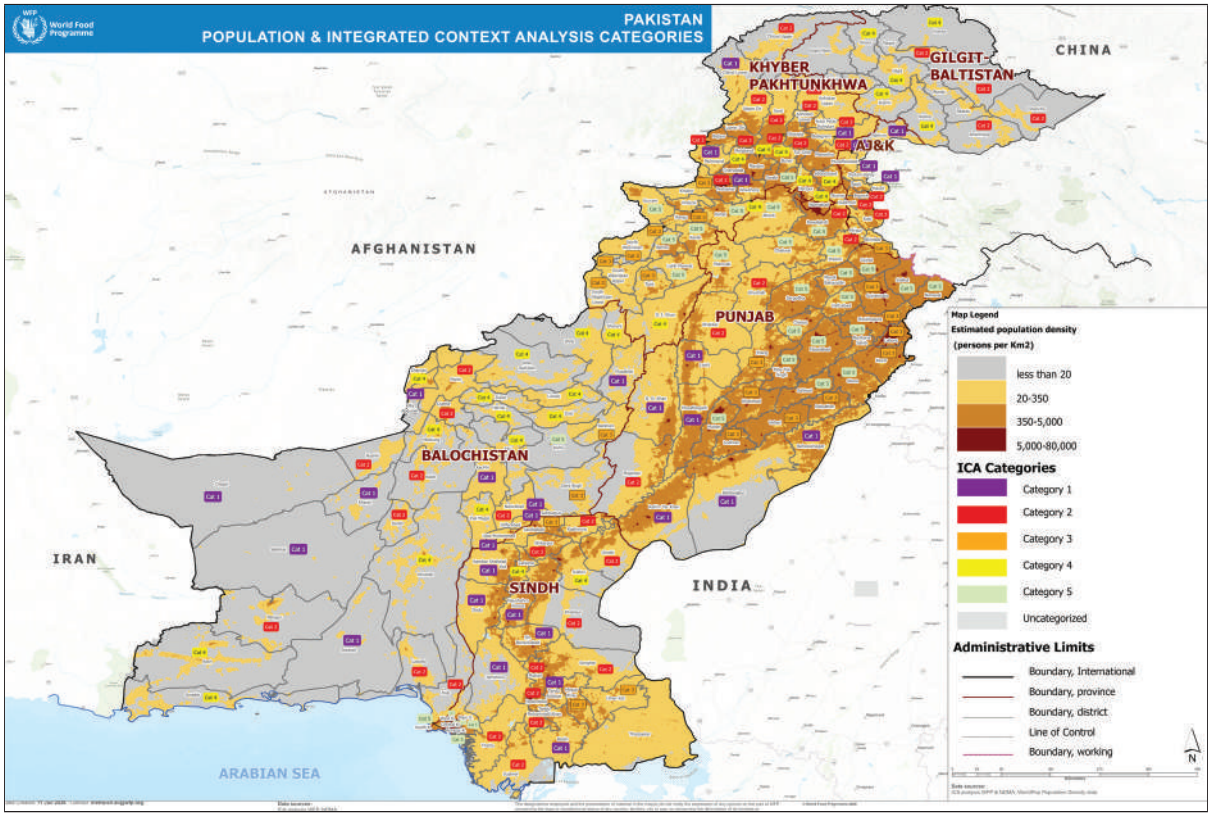
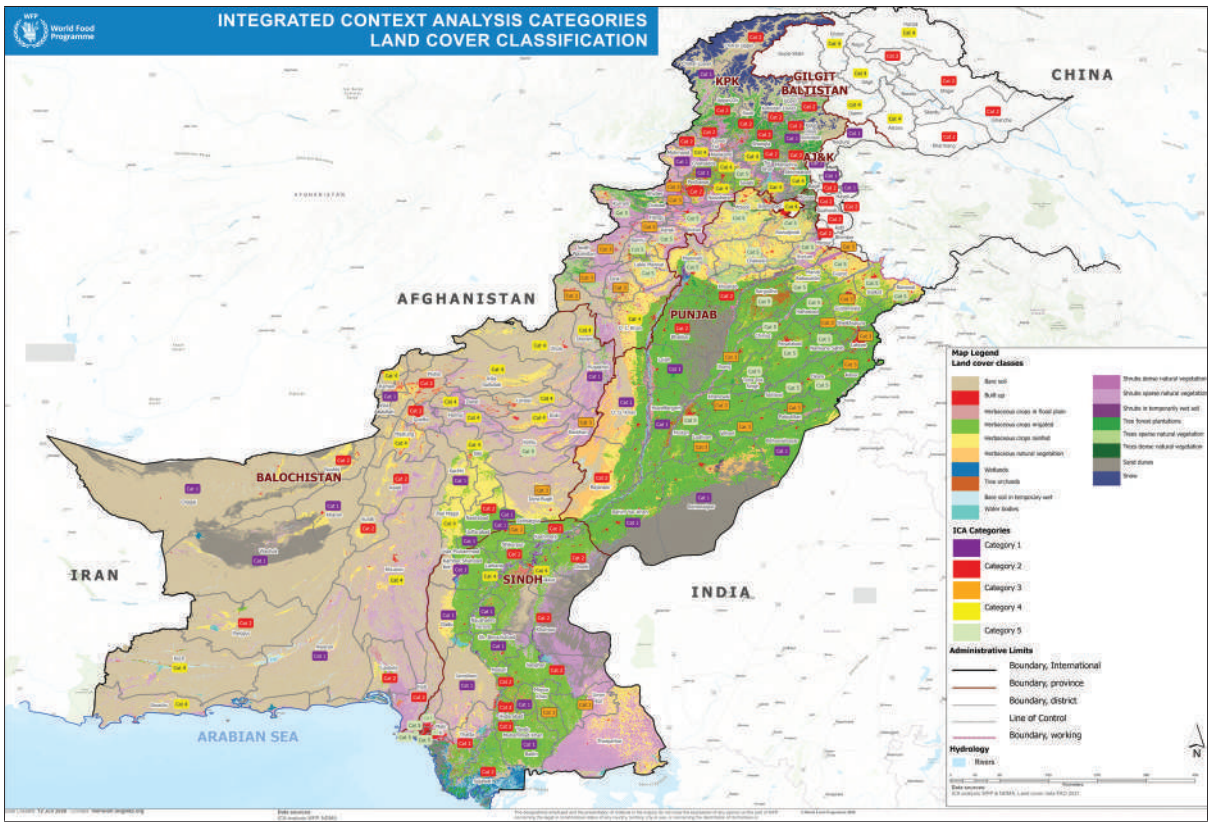


Figure 40: ICA categories and land cover classification (Map)





ICA PROGRAMMATIC IMPLICATIONS

5. ICA Programmatic Implications

The ICA is designed to guide long-term strategic planning by identifying geographic areas where different combinations of interventions can most effectively support food-insecure and vulnerable populations. Its primary objective is to complement and protect the country's long-term development trajectory while reducing vulnerability to climate-related and other shocks. Key aims of the ICA include:

a) Identifying where to focus geographically targeted interventions

b) Supporting populations most at risk of food insecurity and chronic vulnerability

c) Reducing the impacts of climate-related hazards and natural disasters

d) Protecting existing development gains and enabling further progress

e) Promoting context-specific approaches that strengthen the humanitarian-development nexus

The ICA follows a participatory and collaborative process involving government institutions, development partners, and other relevant stakeholders. This process begins with the validation of technical findings and is followed by discussions on their programmatic implications to identify broad strategic priorities for different geographic contexts. These consultations help determine where interventions such as nutrition specific and sensitive social protection and safety nets, Disaster Risk Reduction (DRR), early warning systems, preparedness, and resilience-building activities should be prioritized and positioned.

As part of WFP's Three-Pronged Approach (3PA), the ICA also serves as a strategic planning tool to identify areas where Seasonal Livelihood Programming (SLP) should be undertaken. SLP further defines and refines priority interventions at the district level based on local contexts and livelihood dynamics. The findings from SLP provide evidence for identifying priority areas for local-level planning through Community-Based Participatory Planning (CBPP) processes, ensuring that proposed activities are evidence-based, locally relevant, and validated by communities.

This section presents the outcomes of consultations conducted during the ICA process, both internally within WFP and externally with government counterparts, development partners, and other stakeholders. It focuses on the programmatic implications of the analytical findings and outlines the broad intervention options and strategic priorities recommended for different geographic contexts across the country.

Programmatic Themes Relevant to ICA Areas and Categories[11]

Resilience Strengthening

Resilience refers to the capacity of individuals, households, communities, institutions, and systems to prepare for, anticipate, absorb, recover from, adapt to, and transform in response to shocks and stressors in a timely, efficient, and sustainable manner. Resilience is strengthened through sustained, multi-year support delivered via context-specific, multi-partner programming that is integrated, layered, and sequenced, with local and national actors at the centre. WFP's overarching vision for resilience strengthening is that people are better able to manage shocks and stressors, improve their food security and nutrition, and ultimately reduce their reliance on humanitarian food assistance.

11 This section has benefitted from the Integrated Context Analysis report of Afghanistan by WFP Afghanistan and acknowledges the work (WFP Afghanistan, 2025)

Disaster Risk Reduction (DRR)

Disaster risk reduction refers to measures and actions aimed at preventing, reducing, and managing disaster risks by addressing the underlying drivers of vulnerability and exposure to hazards. Within the ICA framework, DRR primarily focuses on reducing the impacts of climate related natural shocks such as floods, droughts and extreme weather events through preparedness, mitigation, adaptation, and risk-informed planning. By strengthening coping capacities, protecting livelihoods and assets, and promoting climate-resilient development, DRR contributes to enhanced resilience, improved food security, and reduced reliance on humanitarian assistance.

Early Warning

Early warning refers to the timely provision of information on impending hazards and shocks to enable a variety of audiences, from policy makers to individual households, to take anticipatory action and reduce potential impacts. Within the ICA framework, early warning primarily focuses on forecasting climate-related natural shocks such as floods, droughts, heatwaves, and extreme weather events. The key elements are that warning precedes a shock and is intended to trigger some form of immediate action to reduce shock risk.

Thus, early warning is often closely tied to preparedness and is a component of DRR. Meteorological forecasts contribute to the early warning systems in Pakistan.

Anticipatory Action

Anticipatory Action (AA) is a set of pre-defined, pre-financed interventions that are implemented before a forecasted shock or disaster occurs, based on credible early warning information. The objective is to reduce its humanitarian impact on vulnerable populations by ahead of the crisis rather than responding afterwards. The key elements of AA include early warning & forecasting, pre-agreed triggers, pre-financing and early response actions.

Preparedness

Preparedness is a DRR measure that refers to plans, capacities, and actions that precede a climate-related natural shock event and reduce the risk and/or impact it poses. It aims to ensure that institutions, communities, and households are ready to respond effectively when a shock event materializes. Preparedness can be implemented at multiple levels, including nationally, regionally, within organisations or at the community or household level; all aspects are important. Because preparedness takes place before a shock event strikes, preparedness systems are often linked to early warning to provide the information needed to activate preparedness measures in a timely manner.

Shock Responsive Social Protection

Shock-responsive social protection (SRSP) refers to social protection systems that are designed to anticipate, absorb, and respond to shocks (such as climate, economic, or conflict shocks) by rapidly scaling up assistance to affected populations. The objective is to protect vulnerable households from falling deeper into poverty, food insecurity, and livelihood losses when shocks occur.

ICA (Integrated Context Analysis) supports SRSP by identifying where, why and for whom shocks are most likely to drive acute food insecurity and vulnerability, and help identifying targeting strategies and programme design.

Nutrition

Nutrition focuses on ensuring that individuals have adequate dietary intake, nutrient absorption, and nutrient utilization to support healthy growth and prevent malnutrition across the life cycle. For WFP, nutrition programming prioritizes stunting, the prevention and treatment of acute malnutrition (wasting management), especially among children, pregnant and lactating women, and other vulnerable groups, using food, cash, and specialized nutrition products. ICA supports nutrition programming by identifying geographic areas where food insecurity, vulnerability and contextual risk factors are most likely to translate into poor nutrition outcomes. Therefore, strenghthen linkages between nutrition, food security, resilience, and social protection programmes.

Table 19: Broad programme strategies based on ICA areas

Large segments of the population are persistently food insecure, and many additional households are on the brink, regularly falling in and out recurring food insecurity.



ICA AREA 1A

FOOD INSECURITY HIGH

SHOCK TREND HIGH

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Climate adaptation activities such as resilient infrastructure** like construction of protection wall, raised platforms for shelters/temporary evacuation and climate resilient water systems for vulnerable communities, raising of plant nurseries, plantation of trees to increase green cover.
- **Development of Resilience strategy** for areas repeatedly overlapping with IPC 3+.
- **Longer term programming** to address chronic food insecurity, recurrent climatic shocks and frequent disasters.
- **Livelihood diversification** to reduce communities' dependency on income sources which are being affected by recurrent shocks/stressors.

Disaster Risk Reduction, EW and Preparedness

- **Priority areas for disaster risk reduction** related activities.
- **Longer-term programming** efforts required with explicit disaster risk mitigation and prevention objectives.
- **Protective Infrastructure.**
- **Strengthen Early Warning Systems and Anticipatory Action (AA) mechanisms** through regular monitoring and analysis of weather, climate, agriculture, market and food insecurity indicators. This should generate timely evidence to support issuing of early warnings, trigger anticipatory action before shocks occur and risk informed decision making.
- **Establish and strengthen Automatic Weather Stations (AWS)** and integrate them with the Pakistan Meteorological Department to enhance real-time weather monitoring, early warning, and anticipatory action for climate and disaster risk management.

Shock Responsive Social Protection

- **Strengthen shock-responsive social protection systems** through year-round safety nets, including multipurpose cash and food transfers based on the Minimum Expenditure Basket (MEB), combined with livelihood and resilience-building interventions to reduce food insecurity and enhance household coping capacities.
- **Institutionalize and Strengthen provincial social registries** and establish regular funding mechanism through the provincial governments, to support year-round and shock-responsive social protection programmes for vulnerable households.

Nutrition

- **Strengthen nutrition prevention and treatment services,** including nutrition education, dietary diversification, routine malnutrition screening, and community-based management of acute malnutrition, with a focus on vulnerable women and children.
- **Integrated nutrition package** including prevention and treatment of wasting (CMAM), maternal nutrition, micronutrient supplementation, SBCC, nutrition-sensitive livelihoods, school meals, and shock-responsive nutrition surveillance. Prioritize districts with high stunting and wasting for multi-year nutrition-resilience programming.

Large segments of the population are persistently food insecure, and many additional households are on the brink, regularly falling in and out recurring food insecurity.



ICA AREA
1B

FOOD INSECURITY HIGH

SHOCK TREND MEDIUM

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Promote Climate adaptation and resilience activities** to address seasonal food insecurity and support post shock recovery.
- **Develop and implement Resilience strategies** in areas overlapping with IPC 3+ populations.
- **Strengthen and diversify livelihoods** through climate-resilient agriculture, livestock production, skills development, and income-generating activities.

Disaster Risk Reduction, EW and Preparedness

- **Support community based Disaster risk reduction** and preparedness to reduce vulnerability to recurring shocks.
- **Strengthen long-term resilience** and disaster risk mitigation programmes.
- **Invest in Protective Infrastructure** such as flood protection works, water management structures, irrigation systems, drainage networks, and climate-resilient community assets.
- **Develop and regularly update of seasonal hazards** calendars to identify potential deviations from normal seasonal trends and/or new risks, supporting early warning, preparedness, and anticipatory action.

Shock responsive Social Protection

- **Strengthen Seasonal Social Safety nets** through multipurpose cash and food transfers coupled, complimented by livelihood and resilience building activities.
- **Regularly update and apply the Minimum Expenditure Basket,** to guide targeted assistance for vulnerable communities and inform social protection responses.
- **Institutionalize provincial social security registries** and establish regular funding mechanism through the provincial governments.

Nutrition

- **Incorporate nutrition-sensitive and nutrition-specific interventions** to prevent malnutrition and ensure timely treatment of acute cases.
- Prevention and treatment of malnutrition **Integrated nutrition package** including prevention and treatment of wasting (CMAM), maternal nutrition, micronutrient supplementation, SBCC, nutrition-sensitive livelihoods, school meals, and shock-responsive nutrition surveillance. Prioritize districts with high stunting and wasting for multi-year nutrition-resilience programming.

Large segments of the population are persistently food insecure, and many additional households are on the brink, regularly falling in and out recurring food insecurity.



ICA AREA
3A

FOOD INSECURITY
HIGH

SHOCK TREND
LOW

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Implement longer term programmes** to address chronic food insecurity and man-made stressors through enhanced market access, value chain development, livelihood diversification, and income generating skills development.
- **Promote use of agricultural waste** and by products such as rice husk and wheat straw, for briquette production as an alternate energy source. This can create income-generating opportunities, reduce reliance on fuelwood, curb deforestation, and contribute to environmental sustainability.

Disaster Risk Reduction, EW and Preparedness

- **Invest in Effective early warning and disaster preparedness systems** to enable timely action and reduce losses from recurrent shocks.
- **Strengthen risk monitoring Tools** and systems to identify seasonal anomalies and issue timely anticipatory warnings for early action.

Shock Responsive Social Protection

- **Strengthen Year-round and shock responsive social Safety nets** through multipurpose cash and/or food assistance based on the Minimum Expenditure Basket (MEB), coupled with livelihood and resilience-building activities to reduce food insecurity and enhance household resilience. that reduce food insecurity and strengthen livelihoods-For shock responsive social protection, Multipurpose cash/food transfers coupled with resilience building activities. MEB (Minimum Expenditure Basket) designed for assisting the vulnerable communities.
- **Institutionalize and Strengthen provincial social security registries** and establish regular funding mechanism through the provincial governments, to enable efficient targeting of vulnerable households and timely scale-up of assistance during shocks and emergencies.

Nutrition

- **Integrate Nutrition sensitive programmes** to address chronic food insecurity and prevent malnutrition.
- **Nutrition specific and sensitive programming** Focus on **chronic malnutrition reduction** through health systems, food systems approaches, dietary diversity promotion, social protection linkages, women's economic empowerment, complementary feeding, and fortified foods.

The majority are food secure but ill-equipped to face unexpected, important shocks. Somewhat higher numbers face persistent food insecurity, and many others are on the brink, falling in and out of food insecurity occasionally.



ICA AREA
2A

FOOD INSECURITY
MEDIUM

SHOCK TREND
HIGH

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Develop and implement Resilience strategies** for areas overlapping with IPC 3+, populations to strengthen household coping capacities, protect livelihoods, and address the underlying drivers of recurrent food insecurity.
- Promote interventions to **address seasonal food insecurity** and support post shock recovery
- **Promote adaptation activities** focused on livelihoods diversification and seasonal safety nets, while prioritizing Asset creation activities that restore shock-affected community infrastructure and strengthen resilience.

Disaster Risk Reduction, EW and Preparedness

- **Strengthen and promote Disaster Risk Reduction related activities** to reduce vulnerability to recurrent shocks and strengthening community resilience.
- **Invest in Protective Infrastructure** to reduce disaster risks, safeguard livelihoods, and strengthen community resilience against recurrent shocks and seasonal hazards.
- **Strengthen early warning systems** through regular monitoring and analysis of weather and climate anomalies, identify emerging risks, and issue timely anticipatory advice, to support preparedness and early action.

Shock Responsive Social Protection

- **Promote Flexible seasonally targeted safety nets** to reduce food insecurity and prevent vulnerable households from resorting to negative coping strategies.
- **Improve understanding of food insecurity dynamics** to ensure interventions address underlying causes as well as immediate needs.
- **Strengthen livelihoods and stabilizing landscapes** through sustainable natural resource management, land restoration and climate resilient livelihood interventions to reduce the risk of shocks

Nutrition

- **Regularly monitor food and nutrition security,** to support timely identification of emerging risks, informed decision-making, and targeted interventions.
- Establish **seasonal nutrition response systems** linked to lean seasons, floods, droughts and heatwaves. Scale up TSFP/BSFP as required, strengthen MUAC screening, nutrition surveillance and anticipatory nutrition actions (CMAM Surge approach) before expected climatic shocks

The majority are food secure but ill equipped to face unexpected, important shocks. Somewhat higher numbers face persistent food insecurity, and many others are on the brink, falling in and out of food insecurity occasionally.



ICA AREA 2B

FOOD INSECURITY MEDIUM

SHOCK TREND MEDIUM

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Develop and implement Resilience strategies** for areas overlapping with IPC 3+ populations, focusing on livelihood strengthening, risk reduction, climate adaptation, and improved coping capacities to prevent recurrent food insecurity.
- **Promote livelihood diversification and seasonal safety nets,** while prioritizing Asset creation activities that restore shock-affected community infrastructure and build resilience.

Disaster Risk Reduction, EW and Preparedness

- **Invest in Protective Infrastructure,** including flood protection, drainage systems, water management structures, and other community assets that reduce disaster risks and protect livelihoods.
- **Strengthen Early warning systems** to monitor developments that deviate from projected seasonal trends lines, enabling the timely issuance of anticipatory warnings and early actions to reduce the impacts of shocks on vulnerable communities.

Shock responsive Social Protection

- **Implement Seasonal safety nets,** to protect vulnerable households during lean seasons and periods of increased food insecurity.
- **Strengthen the Understanding of food insecurity dynamics** (seasonal, recurrent, or shock-related).
- **Strengthening livelihoods and stabilizing landscapes,** through sustainable natural resource management, land restoration, and climate-resilient livelihood interventions.

Nutrition

- **Regularly monitor food and nutrition security** in high food-insecure districts coupled with high and very high acute and chronic malnutrition.
- **Prevention and treatment of malnutrition**
- **Establish seasonal nutrition response systems** linked to lean seasons, floods, droughts and heatwaves. Scale up TSFP/BSFP as required, strengthen MUAC screening, nutrition surveillance and anticipatory nutrition actions (CMAM Surge approach) before expected climatic shocks

The majority are food secure but ill equipped to face unexpected, important shocks. Somewhat higher numbers face persistent food insecurity, and many others are on the brink, falling in and out of food insecurity occasionally.



ICA AREA
3B

FOOD INSECURITY
MEDIUM

SHOCK TREND
LOW

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Implement livelihood strengthening interventions,** including vocational, and skill-based training, entrepreneurship development, digital and financial literacy, and employment support programmes to enhance household income and resilience.

Disaster Risk Reduction, EW and Preparedness

- **Prioritize cost effective early warning systems and disaster preparedness measures** over major infrastructure investments, focusing on risk awareness, preparedness planning and community response capacities. Promote social and behavioural change communication (SBCC), to strengthen awareness and adoption of positive practices related to food security, nutrition, livelihoods, climate adaptation, and disaster preparedness.

Shock responsive Social Protection

- **Poverty reduction** and development programmes would be beneficial in these areas.

Nutrition

- Target vulnerable groups through **nutrition-sensitive social protection,** adolescent girls' nutrition, school nutrition programmes and behaviour change interventions addressing poor diets.

The majority are food secure and either resilient or rarely exposed to shocks. Contained numbers face persistent food insecurity and contained numbers are on the brink.



ICA AREA 4A

FOOD INSECURITY LOW

SHOCK TREND HIGH

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Promote climate resilient infrastructure,** climate smart agriculture, livelihoods diversification, financial inclusion and social cohesion initiatives to strengthen resilience, enhance adaptive capacity and support sustainable development.

Disaster Risk Reduction, EW and Preparedness

- **Invest in Anticipatory action and DRR system** strengthening, to improve preparedness, enable early action, and build resilience against climate and disaster risks.
- **Strengthen risk analysis, monitoring and forecasting systems** through regular analytical briefs, hotspots mapping, updated Risk Background Briefs with defined triggers and thresholds and continuous monitoring of seasonal risk trends to support anticipatory action and risk-informed decision-making.

Shock responsive Social Protection

- **Implement seasonal safety nets,** to protect vulnerable households during lean seasons and periods of increased food insecurity.
- Strengthen the Understanding of food insecurity dynamics (seasonal, recurrent, or shock-related)
- **Strengthening livelihoods and stabilizing landscapes,** through sustainable natural resource management, land restoration, and climate-resilient livelihood interventions.

Nutrition

- **Minimal nutrition focus.**
- **Strengthen preparedness for nutrition deterioration during shocks,** including pre-positioning supplies, EW-Nutrition integration, emergency nutrition protocols, and district nutrition contingency planning.

The majority are food secure and either resilient or rarely exposed to shocks. Contained numbers face persistent food insecurity and contained numbers are on the brink.



ICA AREA 4B

FOOD INSECURITY LOW

SHOCK TREND MEDIUM

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Promote Light to moderate adaptation support,** preparedness and risk awareness, livelihood diversification, climate smart activities, to strengthen resilience and reduce vulnerability to future shocks and stresses.

Disaster Risk Reduction, EW and Preparedness

- **Strengthening of institutional capacity** for disaster risk management and implement community based small-scale Disaster Risk Reduction (DRR).
- Establish and equip **DEOC (District Emergency Operations Centre)** and where appropriate at Tehsil Emergency Operations Centres (TEOCs), to enhance emergency coordination, information management, early warning dissemination, and response preparedness.

Shock responsive Social Protection

- **Promote poverty reduction and development programmes,** thereby strengthening household resilience and reducing long-term food insecurity.

Nutrition

- **Minimal nutrition focus.**
- **Strengthen preparedness for nutrition deterioration during shocks,** including pre-positioning supplies, EW-Nutrition integration, emergency nutrition protocols, and district nutrition contingency planning.



The majority are food secure and either resilient or rarely exposed to shocks. Contained numbers face persistent food insecurity and contained numbers are on the brink.



ICA AREA
5

FOOD INSECURITY
LOW

SHOCK TREND
LOW

Broad programme strategies – potential focus by ICA area

Climate Resilience

- **Promote Capacity building, skills development, awareness raising,** market strengthening, light preparedness measures, institutional strengthening, community engagement, to enhance resilience, livelihoods, and sustainable development.

Disaster Risk Reduction, EW and Preparedness

- **Promotion of effective early warning and disaster preparedness** is preferable than major investments in infrastructure improvements.

Shock responsive Social Protection

- **Poverty reduction** and development programmes would be beneficial in these areas

Nutrition

- **Maintain nutrition gains** through routine growth monitoring, healthy diet promotion, food fortification, school health and nutrition programmes, and regular monitoring through implementing DHIS 2 Nutrition module, periodic nutrition surveillance.





Programmatic Themes by ICA Categories

ICA classifies districts into 5 Categories based on their levels of recurring food insecurity and exposure to natural hazards. ICA Categories provide evidence to inform discussions and selection of broad programmatic strategies using thematic building blocks of safety nets, DRR, early warning and disaster preparedness.

5.1 Category 1: Building Resilience to Shocks

Category 1 districts are concentrated in southern Punjab, western Sindh, western Balochistan, and northern KP and AJ&K. These areas would benefit from combinations of food security focused social safety nets and comprehensive disaster risk reduction (DRR) interventions. Priority actions should address recurrent drought risks in southern Punjab and western Balochistan, as well as s flash floods and GLOF in northern KP.

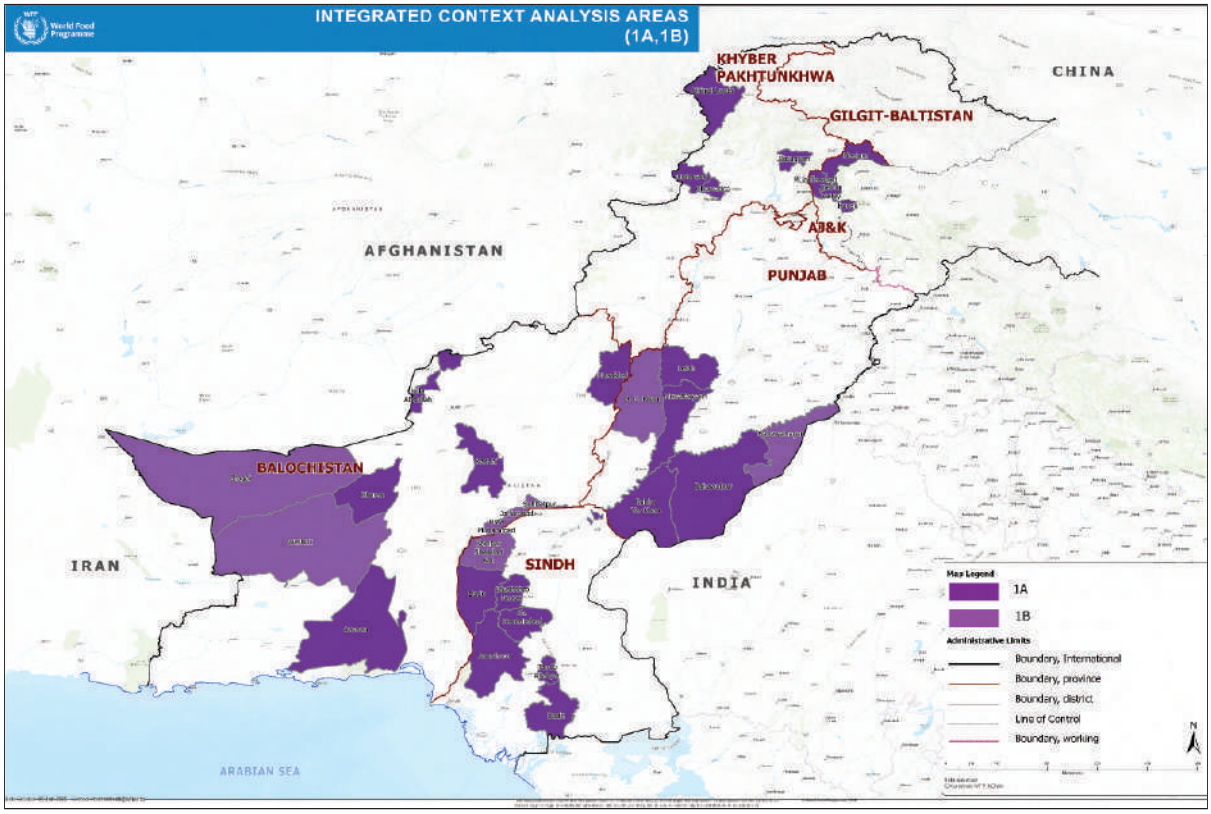
In Category 1 districts recurrence of food insecurity is consistent, throughout the year as well as across successive years. Populations in Category 1 district require longer-term programming that combines food security interventions with explicit disaster risk reduction, mitigation and prevention measures. These measures should prioritize the most food-insecure and vulnerable households, aiming to reduce chronic food insecurity, strengthen livelihoods, enhance resilience and reduce exposure to to frequently occurring or high impact natural shocks.

Resilience building measures: For category 1 districts, these include investments, such as flood protection walls, raised shelters and evacuation platforms, climate resilient water supply systems, and community assets that reduce disaster risks and protect livelihoods. In addition, development of a resilience strategy for ICA 1A and 1B areas that overlap with IPC 3+ populations would help identify hotspots for targeted resilient building, disaster risk reduction and livelihoods strengthening activities.

Category 1 Areas have experienced high or medium levels of natural shocks and high recurrence of food insecurity. Frequent exposure to natural shocks reduces recovery time between crises, eroding people's coping capacities and their surrounding natural resource base which then increases risks associated with future shocks. In these areas, development gains face constant setbacks and people's abilities to move out of food insecurity are seriously challenged.

Combined level of natural hazards	Recurrence of food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	Area 1B
High	Area 4A	Area 2A	Area 1A

Figure 41: Integrated context areas 1A, 1B (Map)



Social protection safety nets: Should be a cornerstone of resilience building in Category 1 districts. Year round, shock responsive safety nets can help vulnerable households meet basic needs, reduce food insecurity and poverty, protect livelihoods, and strengthen resilience to recurrent crisis. These interventions should be linked with livelihood support, landscape restoration and reducing land degradation efforts to address underlying risk drivers.

By reducing reliance on negative coping strategies, such as distress sale of productive assets, safety nets help safeguard development gains and enhance communities' ability to withstand and recover from future shocks.

Analysis and Early warning are critical in Category 1 districts due to to the recurrent nature of food insecurity and exposure to multiple hazards. Regular monitoring and analysis of weather, climate, market and food security indicators can help detect anomalies and deviations from normal seasonal trends at an early stage.

Disaster risk reduction: DRR should concentrate on reducing the risk posed by natural hazards such as floods and droughts in Category 1 districts in Punjab, all Category 1 districts in KP and several districts of Balochistan. There may be opportunities to build dry-season DRR efforts to reduce monsoon flood risk into longer-term food security programming and adding a productive component to safety nets, as discussed above.

Education: In Category 1 districts,, where food insecurity often coincides with low literacy rates, high levels of poverty, and significant numbers of out-of-school children, school feeding programme can serve as an effective safety net that supports education, nutrition and social protection. Providing school meals or take-home rations can incentivize school enrolment and attendance, reduce the financial burden on vulnerable households, improve children's nutritional status, and contribute to long-term human capital development. By encouraging school participation and reducing barriers to education, these interventions can help break the cycle of poverty and food insecurity while strengthening household resilience.

Nutrition: In Category 1 districts, recurring food insecurity and frequent exposure to natural hazards increase the risk of inadequate dietary intake and poor nutrition outcomes, particularly among children, pregnant and lactating women, and other vulnerable groups. Programme responses should therefore incorporate a strong nutrition component, aiming to prevent malnutrition and addressing deteriorating nutrition conditions before they become critical. Based on the situation and the specific context, the nutrition component might include either prevention of malnutrition (wasting, and stunting prevention) or treatment of MAM (for WFP and it has to be continuum of care where SAM and SAM with complications is also implemented by government and relevant agencies), or a combination of prevention and treatment. It will also be helpful to regularly monitor food and nutrition security in high food-insecure districts coupled with high and very high acute and chronic malnutrition.

5.2 Category 2: Seasonal Food Insecurity and Livelihoods Recovery

Districts in Category 2 are those where recurrence of food insecurity exceeds established thresholds in some years but not others, and where natural shock hazard are assessed either high or medium. These districts are scattered across the country and mainly include Panjgur, Lasbela and several other districts in **western Balochistan**. It also includes Khushab, Bhakkar and Rajanpur districts of Punjab, as well as a number of districts in **northern KP**. In Sindh, a few districts in north and several districts in south also fall within this category. In Gilgit-Baltistan, the districts of Nagar, Shigar, Kharmang and Ghanche are similarly classified as Category 2. The intermittent nature of food insecurity in these districts is closely linked to recurring seasonal stresses and periodic shocks, which repeatedly erode household resilience and increase the risk of populations falling back into food insecurity.

Given the seasonal and shock-driven nature of food insecurity in these districts, interventions should focus on resilience building and preventing vulnerable households from slipping into crisis.

Resilience building: Promote livelihood diversification, seasonal safety nets, and post-shock restoration of community assets and infrastructure.

Analysis and Early warning: Strengthen climate and hazard monitoring systems, anticipatory warning mechanisms, and seasonal hazard calendars to support timely preparedness and response.

Districts in Category 2 Areas have experienced some recovery periods during the previous years i.e., food insecurity values were not always above the threshold. Moderate levels of recurrence of food insecurity (as opposed to persistent or chronic recurrence seen in Category 1 districts) coupled with high or medium exposure to natural shocks suggest that people may have experienced seasonal stresses or a specific event or shock which stopped them from meeting their full food requirements for a finite period.

Combined level of natural hazards	Recurrence of food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	Area 1B
High	Area 4A	Area 2A	Area 1A

Disaster risk reduction: These are also priority areas for investing in disaster preparedness and serious efforts for resilient infrastructure to reduce vulnerability to recurrent hazards are required.

Social protection and seasonal safety nets: In these districts, establish flexible and scalable safety nets (productive or protective) that can expand during difficult years protecting livelihoods and preventing negative coping strategies. In such areas seasonal food insecurity, productive safety nets linked to livelihood strengthening and natural resource rehabilitation can help households meet basic needs without depleting assets.

Education: Expand school feeding and take-home ration programmes to improve education, nutrition household food security.

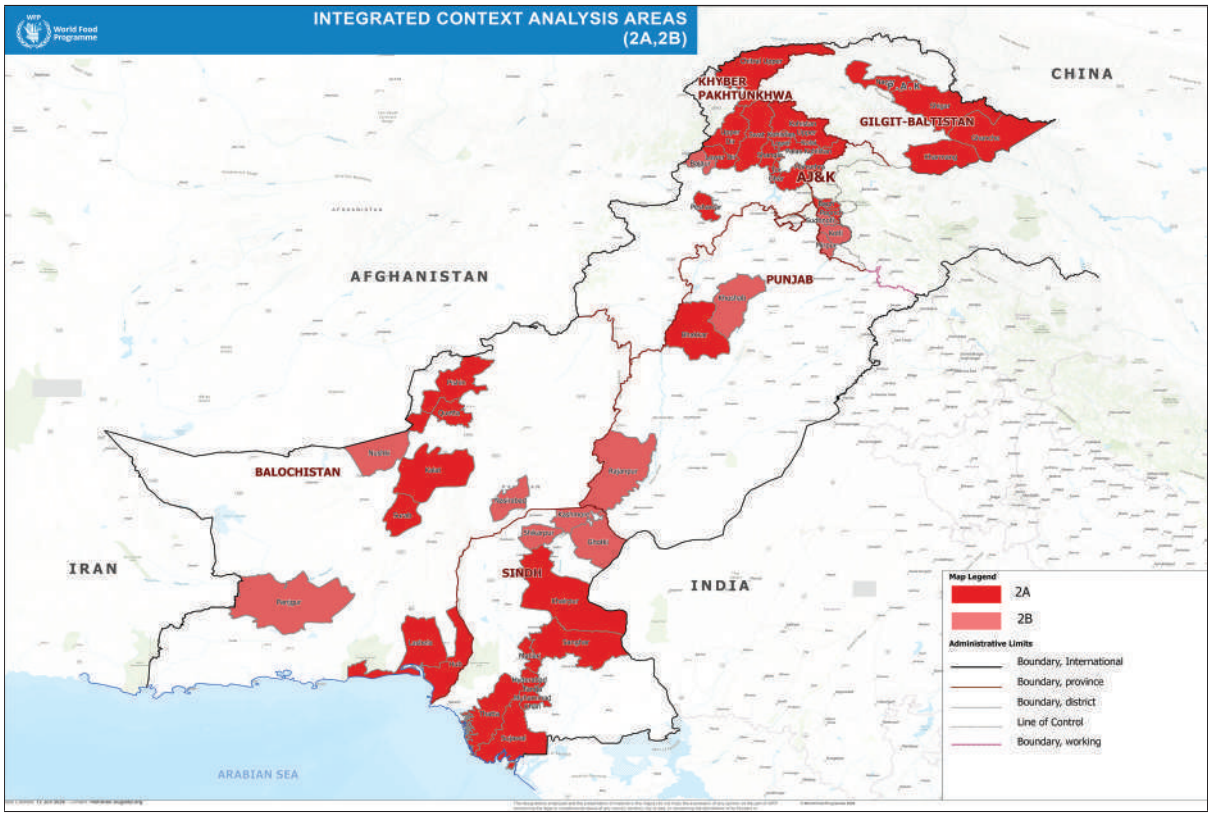
Nutrition: Prioritize the **prevention of malnutrition** (wasting, micronutrient deficiencies, or stunting) and where required, the treatment of moderate acute malnutrition **(MAM), particularly during periods of heightened risk following shocks**.

5.3 Category 3: Long Term Programmes for Food Security Safety Nets, and Livelihood Recovery

Districts in Category 3 are concentrated in **eastern Punjab, parts of Sindh, western and central KP and parts of Balochistan including Dera Bugti and Barkhan**. While exposure to natural hazards is relatively lower than in Categories 1 and 2, chronic food insecurity and socioeconomic vulnerabilities persist.

Given the prevalence of chronic food insecurity, populations living in these districts would benefit from **longer-term food security and resilience programmes** to reduce it and promote development through predictable social protection and productive safety nets that strengthen livelihoods and safeguard development efforts. Where relevant, these should be coupled with actions to strengthen early warning systems and preparedness, as well as interventions to support environmental restoration land degradation.

Figure 42: Integrated context areas 2A, 2B (Map)



Locations in Category 3 have seen high or moderate levels of recurrence of food insecurity but a relatively low level of exposure to natural shocks. Populations in these areas consistently fail to meet

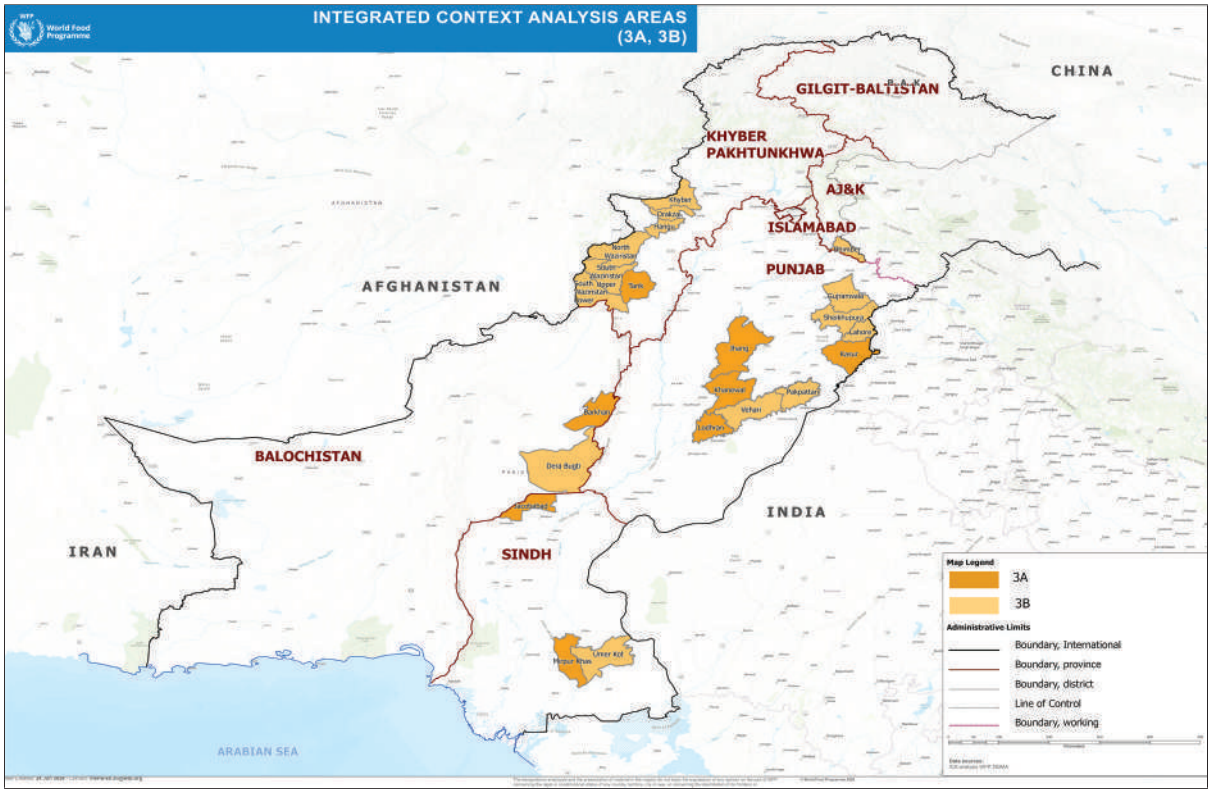
Combined level of natural hazards	Recurrence of food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	Area 1B
High	Area 4A	Area 2A	Area 1A

Resilience activities: Tangible interventions may include enhanced market access and value chain, and vocational and skills-based training, livelihood diversification and income generation, digital and financial literacy, and climate smart agriculture and sustainable resource management.

Analysis and Early Warning: In these areas it will be important to regular monitor seasonal and socio-economic risk drivers to identify emerging threats and trigger timely anticipatory action.

Disaster risk reduction: DRR should focus on strengthening early warning and disaster preparedness systems, integrating science based forecasts into local response frameworks.

Figure 43: Integrated context areas 3A, 3B (Map)



Nutrition: Where poor dietary intake exists before shocks occur, nutrition prevention programmes should continue alongside agriculture, livelihoods, and poverty reduction initiatives to improve diet quality and reduce malnutrition.

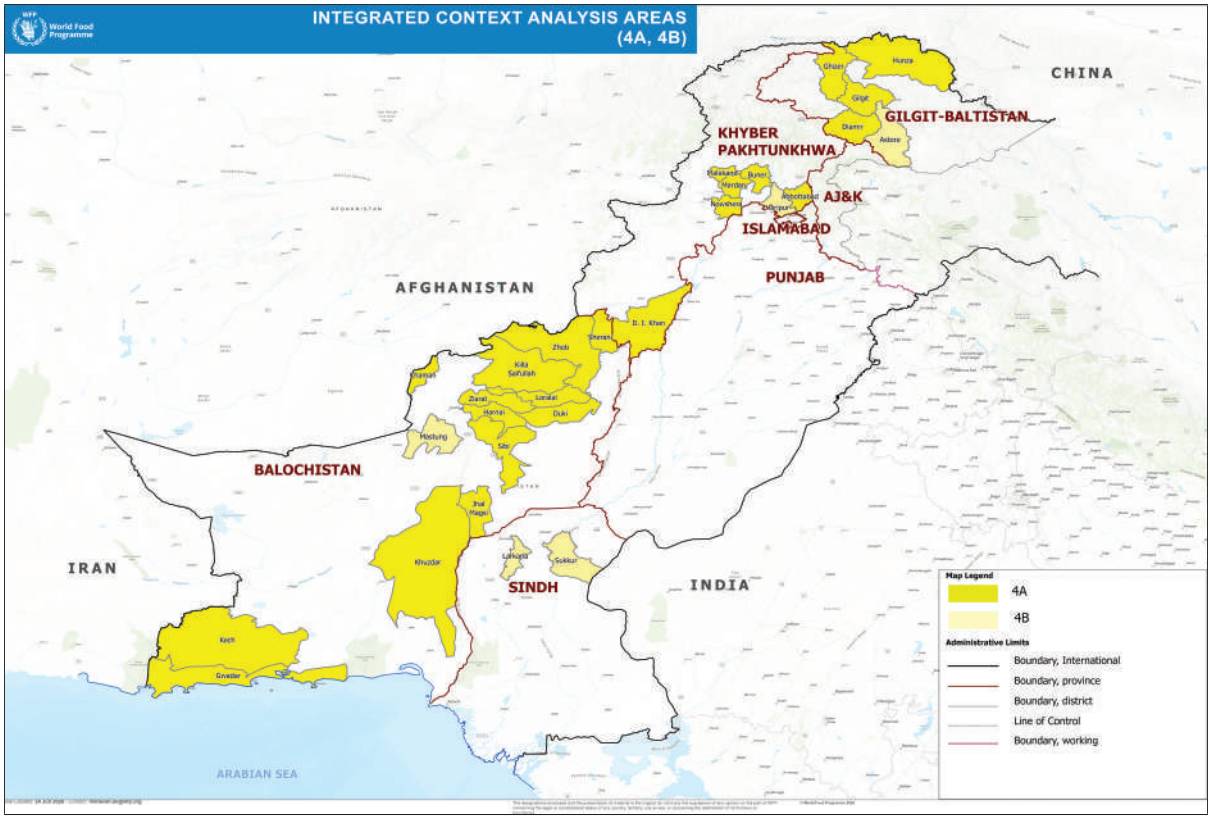
5.4 Category 4: Broad Disaster Risk Reduction and Reducing Risks to Shocks

ICA Category 4 districts are primarily concentrated in northern and central Balochistan, with a few districts in KP, Punjab and GB.

Category 4 districts have seen low recurrence of food insecurity and high to medium exposure to natural shocks. Although the recurrence of food insecurity is low or minimal, pockets of food insecurity are still likely to exist. In addition, given the high levels of exposure to natural shocks, if mitigating measures are not put in place to reduce land degradation as an aggravating factor for future risk (where relevant), food secure populations could be pushed into food insecurity when shock events.

Combined level of natural hazards	Recurrence of food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	Area 1B
High	Area 4A	Area 2A	Area 1A

Figure 44: Integrated context areas 4A, 4B (Map)



Although recurrence of food insecurity is relatively low in these areas, specifi targeted interventions remains necessary to improve for vulnerable population residing remote areas, and informal settlements of urban and peri-urban areas.

Programme should focus on protecting development gains, preventing future shocks through disaster risk reduction, resilience building and targeted support for vulnerable groups. Interventions should strengthen social safety nets, enhance community resilience, and reduce underlying risk factors.

Resilience and Disaster Risk Reduction: interventions should include, landscape restoration and land degradation reversal, climate adaptation and natural resource management, strengthening social safety nets, community-based disaster preparedness and risk mitigation, and gender-responsive programming that actively engages both men and women in resilience-building efforts.

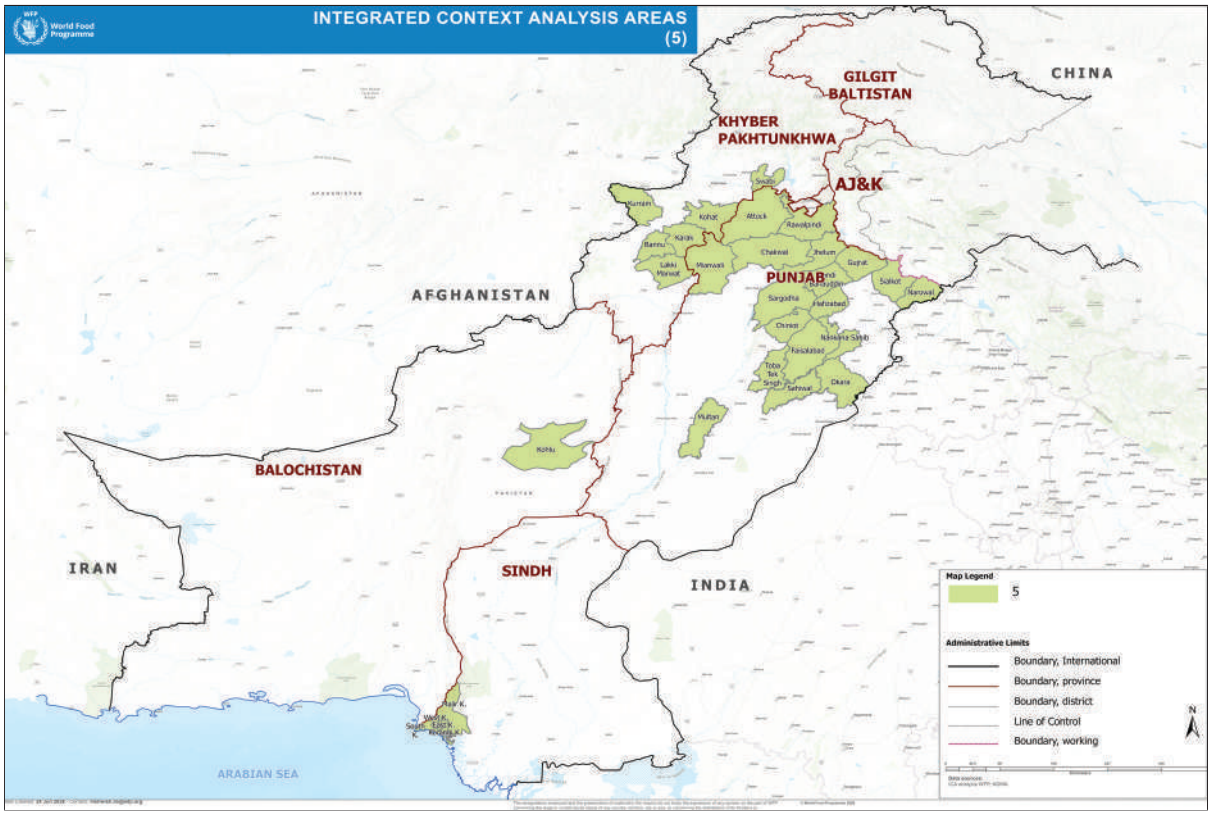
Analysis and Early Warning: Efforts should focus on providing risk analysis, identifying emerging geographical hotspots, updateing risk profiles and trigger thresholds, and monitoring seasonal trends to inform timely preparedness and preventive actions.

5.5 Category 5: Early Warning and Enhanced Disaster Preparedness

ICA Category 5 districts are mainly located in northern and central **Punjab**, and bordering districts in KP including Kohat, Karak, Swabi and Lakki Marwat as well as Kohlu in Balochistan.

These districts generally experience low recurrence of food insecurity and climate related hazards, reflecting relatively stronger development outcomes and resilience. Efforts should focus on sustaining development gains through poverty reduction, resilience building, and preventive risk management. Particular attention should be given to halting and reversing land degradation to safeguard future food security, livelihoods and environmental sustainability.

Figure 45: Integrated context areas 5 (Map)



Disaster Risk Reduction and Preparedness: Although hazard recurrence is relatively low, droughts and floods can still occur. Investments should therefore prioritize including, strengthening early warning and forecasting systems, enhancing disaster preparedness and response capacities, improving risk communication and contingency planning, protecting existing development gains from future shocks, and promoting gender-responsive community engagement in risk mitigation and preparedness efforts.

Analysis and Early Warning: In these areas, it will be important to issue regular Risk Background Briefs providing forward looking analysis of contextual and emerging risks. Monitoring potential triggers and seasonal trends will support anticipatory planning and ensure timely preparedness actions when required.

Category 5 districts are those who have seen low recurrence of food insecurity and low exposure to natural hazards.

Combined level of natural hazards	Recurrence of food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	Area 1B
High	Area 4A	Area 2A	Area 1A



TECHNICAL ANNEXES

6. TECHNICAL ANNEXES

6.1 Methodology for Scoring Natural Shocks

The hazard scores for natural shocks were sourced from the National Emergencies Operation Centre (NEOC), NDMA Pakistan. These scores are based on a standardized five-category classification system, where districts are ranked according to their level of exposure and risk from specific natural hazards. The methodology and scoring criteria used for each hazard are presented in the sections below.

6.1.1 Rapid-onset Shocks (Flood, Landslide, Earthquake, GLOF)

Earthquake

Seismic hazard in Pakistan is assessed using Probabilistic Seismic Hazard Assessment (PSHA), which estimates the likelihood of ground shaking at a location based on historical, instrumental, and paleoseismic earthquake records.
The assessment considers mapped faults, background seismicity, and maximum potential earthquake magnitudes. Ground shaking is estimated using Ground Motion Prediction Equations (GMPEs) to estimate Peak Ground Acceleration (PGA) and Spectral Acceleration (SA). Uncertainties are incorporated through multiple hazard scenarios and modelling approaches. The resulting hazard analysis produces earthquake risk classifications and identifies the most likely earthquake scenarios affecting an area.

Landslide

Landslide hazard in Pakistan is assessed by integrating topographic, geological, soil, land cover, infrastructure, and precipitation data. Key factors such as slope, aspect, curvature, topographic indices, and hydrological features, proximity to roads and streams, and geological conditions, are analyzed to determine susceptibility. Three main methodological approaches employed are: 1) expert-based, 2) statistical, and 3) physical models, which use historical landslide records and environmental conditions to estimate the likelihood of landslide occurrence. Model performance is validated using standard statistical techniques to ensure reliability. The results are used to generate Landslide Susceptibility Index (LSI), classifying areas into categories from low to very high susceptibility. Landslide scores are assigned using a five-point scale representing relative landslide hazard class by district.

Flood

(Riverine/Flash)

Flood hazard assessment requires the integration of terrain, hydrological, rainfall, river, and land use data to evaluate the likelihood and impact of riverine and flash floods. Digital Elevation Models (DEMs), rainfall records, river flow data, and historical flood information are used to model flood behaviour and vulnerable areas. Riverine flood hazards are evaluated through hydrological and hydraulic modelling of river systems, considering river discharge, channel characteristics, and floodplain dynamics. Flood maps are generated for different return periods to identify areas at risk of inundation.

Flash flood hazards are assessed using hydrological and hydraulic models that simulate runoff generation, flow routing and flood inundation. Hydrological models such as HEC-HMS, MIKE SHE, or SWMM simulate runoff from intense rainfall, catchment slope, soil properties, and land cover characteristics. conditionsThe generated runoff is then routed through natural channels and drainage networks using HEC-RAS 2D or MIKE Flood to simulate flood propagation. Model outputs are used to generate flood inundation maps showing flood extent, water depth, velocity, and duration, which help identify highly vulnerable settlements and infrastructure.

The resulting flood hazard maps classify areas according to their level of exposure and flood susceptibility. District flood scores are assigned using a five-point scale representing relative flood risk.

Glacial Lake Outburst Flood (GLOF)

GLOF hazards are assessed using topographic, glaciological, hydrological, and climatic datasets to identify potentially unstable glacial lakes and evaluate downstream flood risks. Key inputs data include DEMs, glacial lake inventories, glacier extent, moraine characteristics, climate records, historical GLOF events, and exposure data for settlements and infrastructure. Lake stability is assessed based on factors such as lake volume, dam type and condition, slope stability, and potential triggers including intense rainfall, rapid snow and glacier melt, glacier calving, and seismic activity. Hydrological and hydraulic models, such as HEC-RAS and MIKE Flood, are then used to simulate lake outburst scenarios, flood routing, and inundation patterns. Model outputs, including flood extent, depth, velocity, and duration, are used to delineate hazard zones and identify high-risk areas, while climate change projections help assess future GLOF risks associated with glacier retreat and increasing extreme weather events.

6.1.2 Slow-onset Shocks

Drought

The drought assessment was conducted using multiple meteorological, agricultural, and hydrological indicators to capture different dimensions of drought conditions. Meteorological drought was evaluated using indices such as SPI, SPEI, NDI and PHDI, which measure precipitation anomalies, evapotranspiration demand and long-term moisture conditions.

Agricultural drought conditions were assessed using satellite-derived indicators including Normalized Difference Vegetation Index (NDVI), Vegetation Condition Index (VCI), Temperature Condition Index (TCI), and the combined Vegetation Health Index (VHI), Soil Moisture Anomaly (SMA) and Aridity Anomaly Index (AAI), to monitor vegetation health, crop stress, and soil moisture deficits.

To integrate these indicators into a comprehensive drought hazard assessment, the Analytical Hierarchy Process (AHP) was applied as a multi-criteria decision-making approach. AHP assigns relative weights to each drought indicator through pairwise comparison using a standardized importance scale. The weighted layers were then combined using spatial overlay techniques to generate a composite drought hazard map. Consistency of the assigned weights was verified using the consistency ratio (CR), where values below 0.10 indicate acceptable reliability of the comparison matrix.

6.1.3 Other Hazards

Avalanche

Avalanche hazards are assessed using topographic, meteorological, snowpack, and land cover datasets, to identify avalanche-prone areas and potential impact zones. Key inputs datasets include Digital Elevation Models (DEMs), snow cover and snow depth information, meteorological observations, land use/land cover, historical avalanche records, and infrastructure data.

Avalanche initiation is evaluated based on factors such as slope angle, aspect, elevation, snow accumulation, wind redistribution, temperature variations and snowpack stability. Terrain-based avalanche modelling approach is used to estimate avalanche paths, velocities, and runout distances, incorporating terrain morphology, surface roughness, and potential snow volumes. Model outputs are used to produce avalanche hazard maps identifying areas of potential release, flow paths, and deposition zones.

Smog

The smog assessment integrates satellite-derived air pollutant data with meteorological observations, to identify areas susceptible to poor air quality and haze events. to

capture both pollutant concentrations and meteorological conditions influencing smog formation Pollutant data including Nitrogen Dioxide (NO_2), Sulfur Dioxide (SO_2), Carbon Monoxide (CO), and Ozone (O_3) are derived from the Sentinel-5P TROPOMI sensor with daily observations. Meteorological parameters including air temperature, wind speed, relative humidity, surface pressure, and precipitation are derived from satellite datasets.

Pollutant concentrations represent emission intensity from sources such as industry, transport, and biomass burning, whereas meteorological conditions determine pollutant dispersion and accumulation. These variables are normalized and combined using a Weighted Linear Combination (WLC) approach within a Fog-Smog Index (FSI) framework. Areas with high pollutant levels, low wind speeds, temperature inversions, high humidity, and stable atmospheric conditions are identified as having elevated smog hazard, enabling the delineation of smog-prone zones and assessment of population exposure.

Cyclone

Cyclone hazard assessment integrates historical cyclone records, meteorological observations, oceanographic parameters, and remote sensing datasets to evaluate cyclone behaviour and potential impacts. Historical cyclone data including tracks, central pressure, and wind intensity are analysed alongside atmospheric variables such as sea surface temperature, ocean currents, and costal topography.

Cyclone characterization identifies affected regions through the analysis of historical tracks, frequency and intensity patterns. Numerical modelling using the Weather Research and Forecasting (WRF) model is applied to assess cyclone wind fields and pressure distributions, while satellite-based observations support the evaluation of cyclone formation and intensification processes.

Storm surge and coastal impacts are assessed using hydrodynamic and wave models that simulate cyclone characteristics, bathymetry, and coastal topography to estimate surge heights, wave dynamics, and inundation extents. The outputs are integrated within a GIS environment to produce cyclone hazard maps that identify areas vulnerable to storm surge, coastal flooding, and wind damage, supporting early warning systems and disaster risk management.

Forest Fire

The process uses a geospatial framework that integrates vegetation , topographic, and meteorological factors to identify fire-prone areas. Key datasets include Sentinel-2 NDMI for vegetation moisture, land cover maps for vegetation type, SRTM/ASTER elevation data for slope and aspect, ERA5-Land temperature, humidity and wind data, and NASA FIRMS fire hotspots for validation. Factors such as low vegetation moisture, high temperature, low humidity, and strong winds indicate increased fire potential.

The final Forest Fire Risk Index (FFRI) is developed using a weighted overlay approach, combining normalized environmental factors based on their influence on fire occurrence and spread. Topographic factors influence fire spread, while weather conditions determine fire danger. Historical fire observations are used to evaluate the model performance and improve the reliability of the risk assessment, producing spatial hazard maps of forest fire susceptibility and high-risk zones.

6.1.4 Land Degradation

The land degradation assessment follows UNCCD methodology using the Trends.Earth platform. The assessment integrates three indicators using the one-out, all-out principle: (1) Land cover change assessed using ESA CCI land cover datasets and classified into seven UNCCD categories; (2) Land productivity dynamics computed from MODIS and AVHRR NDVI time series and classified as declining, moderate decline, stressed, stable, or improving; and (3) Soil organic carbon (SOC) stocks in topsoil (0-30 cm) using SoilGrids 250m data.



The baseline period (2001-2015) is compared with the reporting period (2016-2019) to identify areas of degradation and improvement. Results from the three indicators are combined to produce spatial land degradation maps, highlighting degraded, stable, and improving land areas.

6.2 Province Wise Hazard Maps and Data Tables

6.2.1 Balochistan

For Balochistan, **drought and flash floods** were identified as two primary natural hazards. The following maps present the hazard risk for drought and flash floods separately, as well as the combined hazard score derived from both hazards. The combined hazard index is classified into low, medium and high risk categories to support risk-informed planning and prioritization of disaster risk reduction interventions.

Figure 46: Balochistan flash floods hazard (Map)

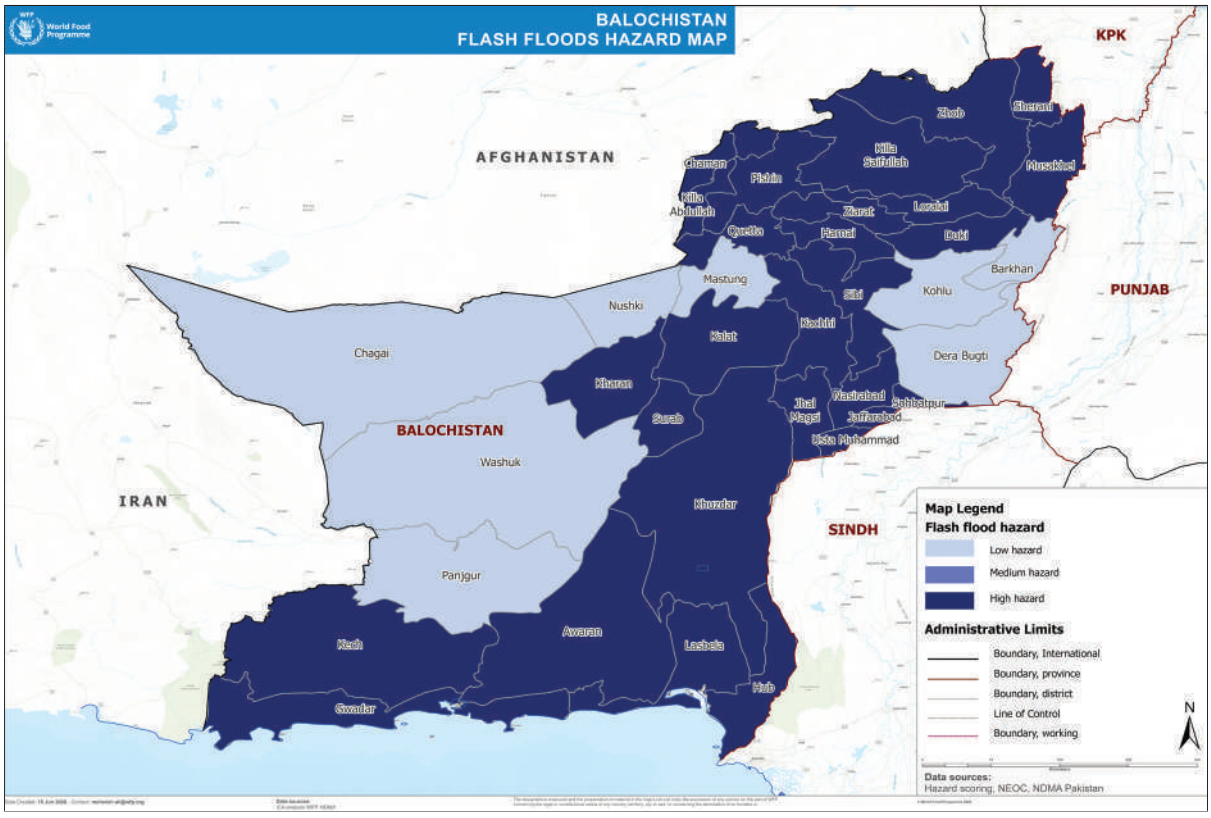


Figure 47: Balochistan drought hazard (Map)

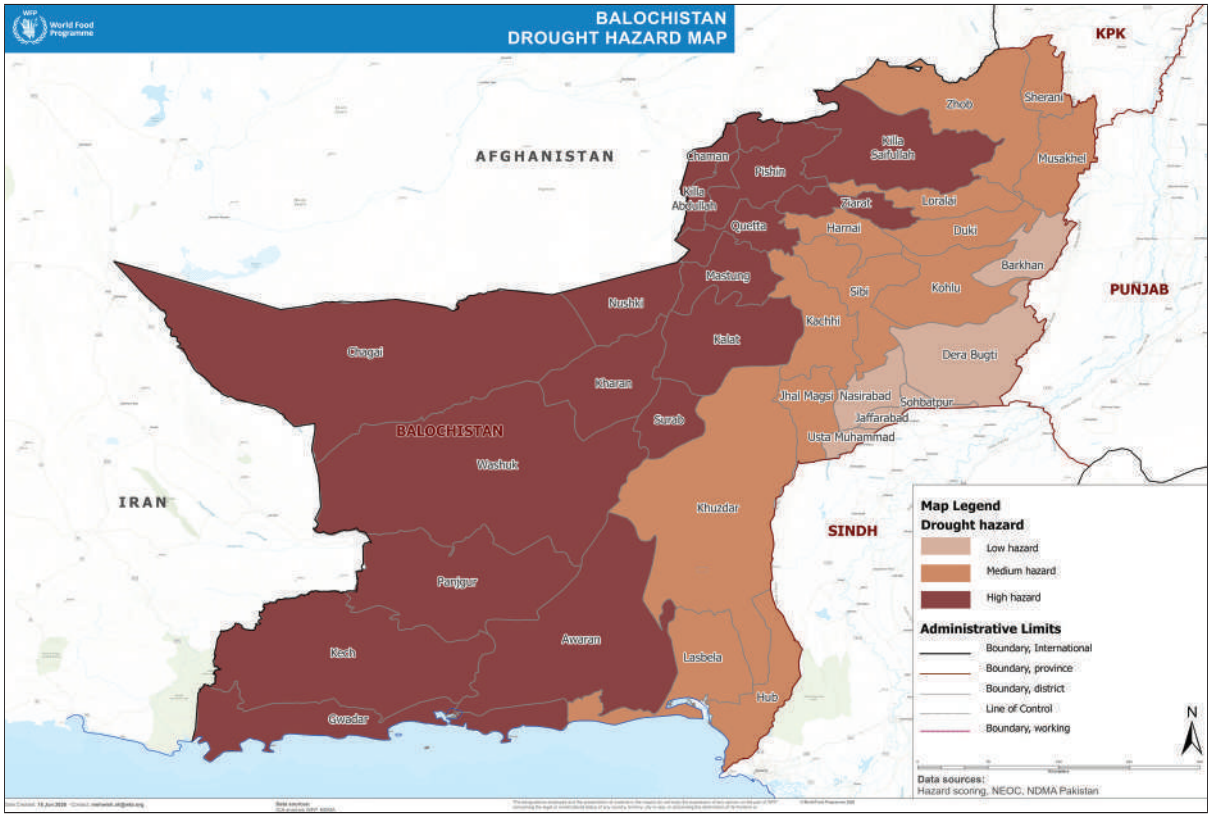
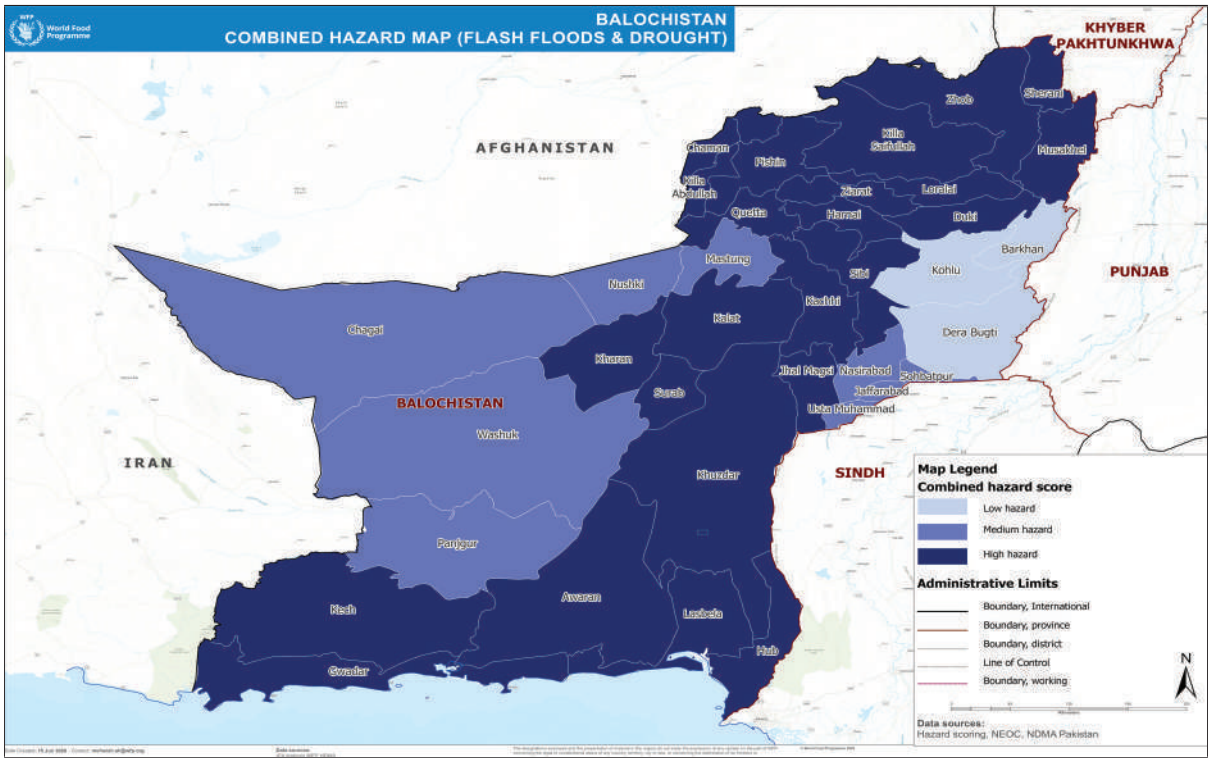


Figure 48: Balochistan combined hazard (Map)



Maps for additional hazards for the province of Balochistan are presented below.

Figure 49: Balochistan forest fire (Map)

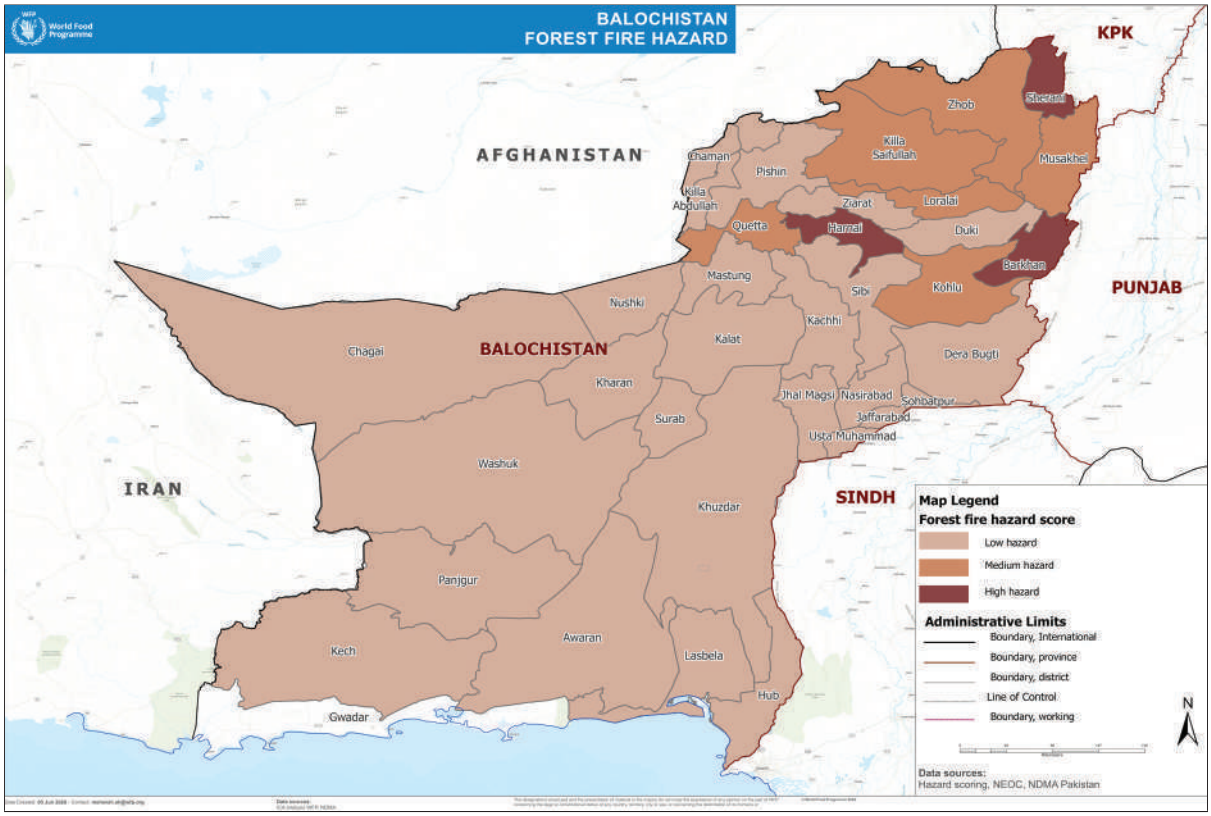


Figure 50: Balochistan earthquake hazard (Map)

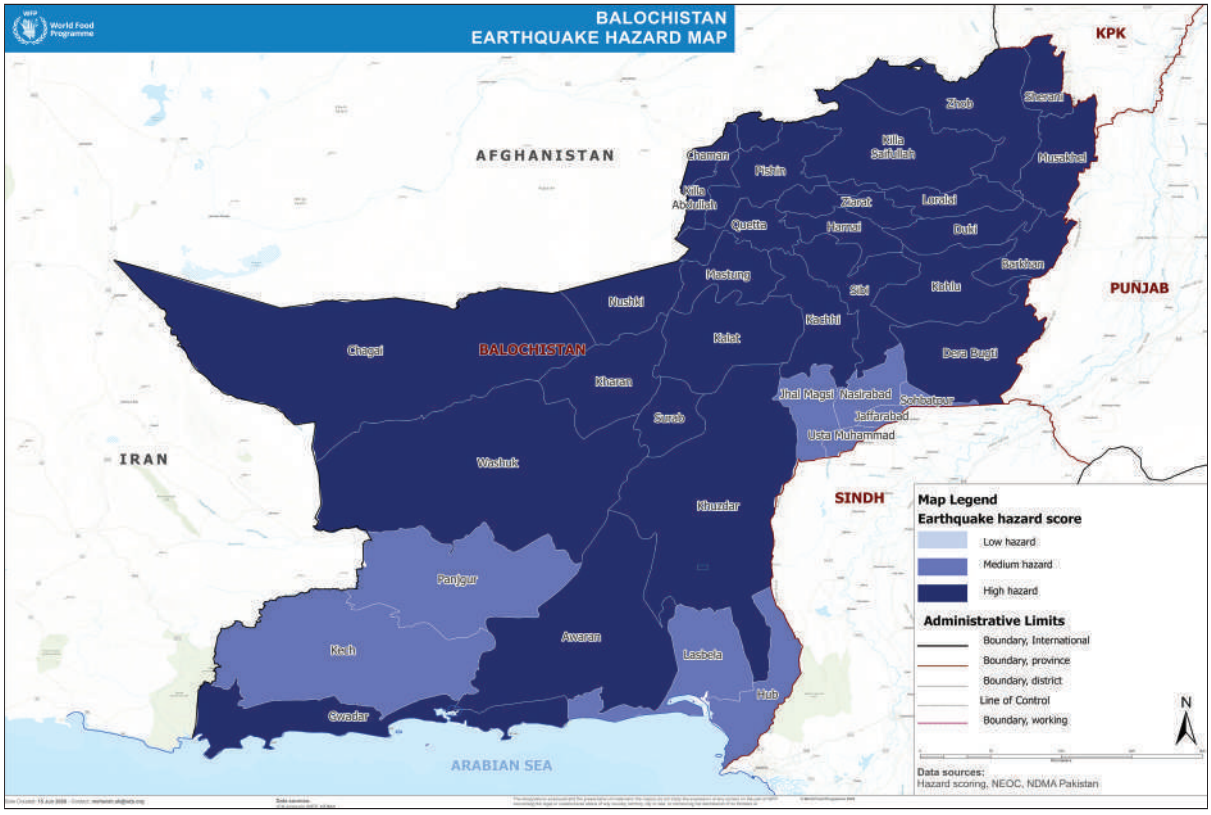


Figure 51: Balochistan heatwave hazard (Map)

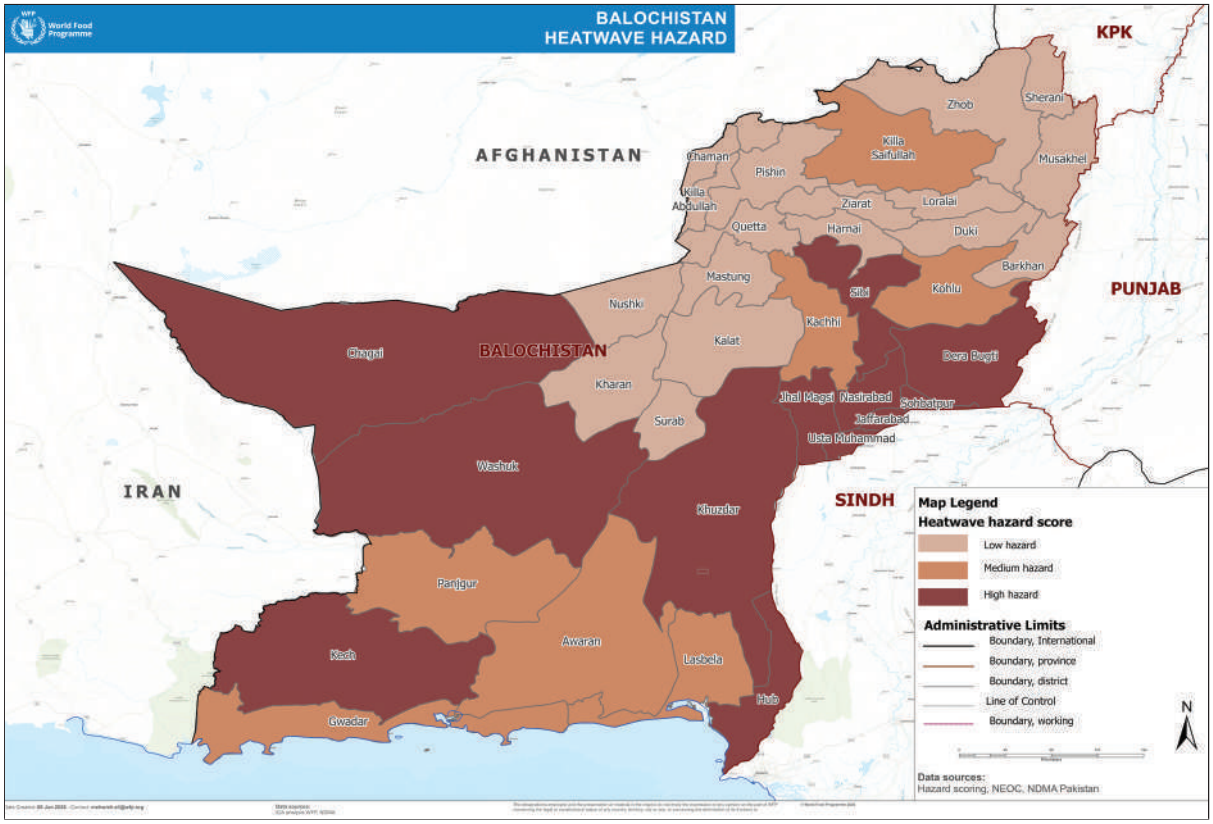




Table 20: ICA data table Balochistan

			Estimated Population vunerable to Food Insecurity			Food Insecurity	Natural Hazard scores			ICA Categories						
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity above threshold	Flash Flood risk	Drought risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Unemployment rate	Literacy rate	Prevalence of Wasting (NNS)	Prevalence of Stunting (NNS)
1	AWARAN	178,958	101,778	63,405	140,152	High	High	High	High	Area1A	1	Medium	High	Low	Medium	Very High
2	BARKHAN	210,249	112,183	102,602	121,764	High	Low	Low	Low	Area 3A	3	High	High	Low	Very High	Very High
4	CHAGAI	269,192	148,726	86,491	210,960	High	Low	High	Medium	Area 1B	1	High	High	Low	Very High	Very High
5	CHAMAN	466,218	122,949	64,489	181,409	Low	High	High	High	Area 4A	4	High	High	Low	-	-
6	DERA BUGTI	355,274	186,994	118,910	255,077	Medium	Low	Low	Low	Area 3B	3	High	High	Low	Very High	Very High
7	DUKI	205,044	65,454	35,883	95,025	Low	High	Medium	High	Area 4A	4	High	High	Medium	-	-
8	GWADAR	305,160	76,727	14,007	139,447	Low	High	High	High	Area 4A	4	Medium	High	Medium	Medium	Very High
9	HARNAI	127,571	26,021	5,919	46,123	Low	High	Medium	High	Area 4A	4	High	High	Low	Very High	Very High
36	HUB	382,885	167,715	83,124	252,306	Medium	High	Medium	High	Area 2A	2	-	-	High	-	-
10	JAFFARABAD	312,458	155,423	114,828	196,017	High	High	Low	Medium	Area 1B	1	High	Medium	Low	Very High	Very High
11	JHAL MAGSI	203,368	84,743	43,551	125,934	Low	High	Medium	High	Area 4A	4	High	High	Low	Very High	Very High
3	KACHHI	442,612	250,352	177,111	323,593	High	High	Medium	High	Area1A	1	High	High	Low	Very High	Very High
12	KALAT	272,506	131,585	45,331	217,838	Medium	High	High	High	Area 2A	2	Medium	High	Low	Very High	Very High
13	KECH	1,060,931	181,629	81,426	281,831	Low	High	High	High	Area 4A	4	Medium	High	Medium	Very High	Very High
14	KHARAN	260,352	116,743	77,168	156,318	High	High	High	High	Area1A	1	High	High	Medium	Very High	Very High
15	KHUZDAR	997,214	339,147	269,547	408,747	Low	High	Medium	High	Area 4A	4	High	High	Low	Medium	Very High
16	KILLA ABDULLAH	361,971	155,945	113,840	198,049	High	High	High	High	Area1A	1	High	High	Low	Very High	Very High
17	KILLA SAIFULLAH	380,200	98,258	52,591	143,925	Low	High	High	High	Area 4A	4	High	High	Low	Very High	Very High
18	KOHLU	260,220	37,771	30,368	45,175	Low	Low	Medium	Low	Area 5	5	High	High	Low	Medium	Very High
19	LASBELA	298,092	130,737	65,044	196,431	Medium	High	Medium	High	Area 2A	2	High	Medium	Low	Very High	Very High
20	LORALAI	272,432	96,216	60,766	131,667	Low	High	Medium	High	Area 4A	4	Medium	High	Medium	Very High	Very High

			Estimated Population vunerable to Food Insecurity			Food Insecurity	Natural Hazard scores			ICA Categories						
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity above threshold	Flash Flood risk	Drought risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Unemployment rate	Literacy rate	Prevalence of Wasting (NNS)	Prevalence of Stunting (NNS)
21	MASTUNG	313,271	50,314	40,067	60,561	Low	Low	High	Medium	Area 4B	4	Medium	High	Medium	Medium	Very High
22	MUSAKHEL	182,275	72,577	36,391	108,763	High	High	Medium	High	Area1A	1	Medium	High	Low	Very High	Very High
23	NASIRABAD	563,377	225,618	98,337	352,899	Medium	High	Low	Medium	Area 2B	2	High	Medium	Low	Very High	Very High
24	NUSHKI	207,834	80,036	50,254	109,817	Medium	Low	High	Medium	Area 2B	2	Medium	High	High	Very High	Very High
25	PANJGUR	509,781	171,105	93,341	248,869	Medium	Low	High	Medium	Area 2B	2	High	High	Medium	Very High	Very High
26	PISHIN	835,482	257,305	127,077	387,534	Medium	High	High	High	Area 2A	2	High	Medium	Medium	Very High	Very High
27	QUETTA	2,595,492	934,883	654,687	1,215,080	Medium	High	High	High	Area 2A	2	Medium	Medium	Medium	Very High	Very High
28	SHERANI	191,687	12,836	11,559	14,114	Low	High	Medium	High	Area 4A	4	High	High	Low	Medium	Very High
29	SIBI	224,148	60,081	38,217	81,945	Low	High	Medium	High	Area 4A	4	High	High	Medium	Very High	Very High
30	SOHBATPUR	240,106	130,627	113,150	148,104	High	High	Low	Medium	Area 1B	1	Medium	Medium	Medium	Very High	Very High
31	SURAB	278,092	114,989	46,261	183,718	Medium	High	High	High	Area 2A	2	High	High	Low	-	-
35	USTA MUHAMMAD	282,100	140,322	103,672	176,973	High	High	Low	Medium	Area 1B	1	-	-	High	-	-
32	WASHUK	302,623	158,950	92,860	225,040	High	Low	High	Medium	Area 1B	1	High	High	Low	Very High	Very High
33	ZHOB	355,692	83,351	40,591	126,111	Low	High	Medium	High	Area 4A	4	Medium	High	Low	Medium	Very High
34	ZIARAT	189,535	57,631	34,615	80,647	Low	High	High	High	Area 4A	4	High	High	Medium	Very High	Very High
		14,894,402	**5,337,721**	**3,287,481**	**7,387,962**											



6.2.2 Khyber Pakhtunkhwa

For KP, **earthquake and riverine floods** were identified as the two primary natural hazards. The following maps present the hazard risk for earthquakes and riverine floods separately, as well as combined hazard score derived from the two hazards. The combined hazard index is reclassified into low, medium and high categories to highlight areas with elevated multi-hazard exposure and support disaster risk management, preparedness, and resilience planning.

Figure 52: Khyber Pakhtunkhwa riverine floods hazard (Map)

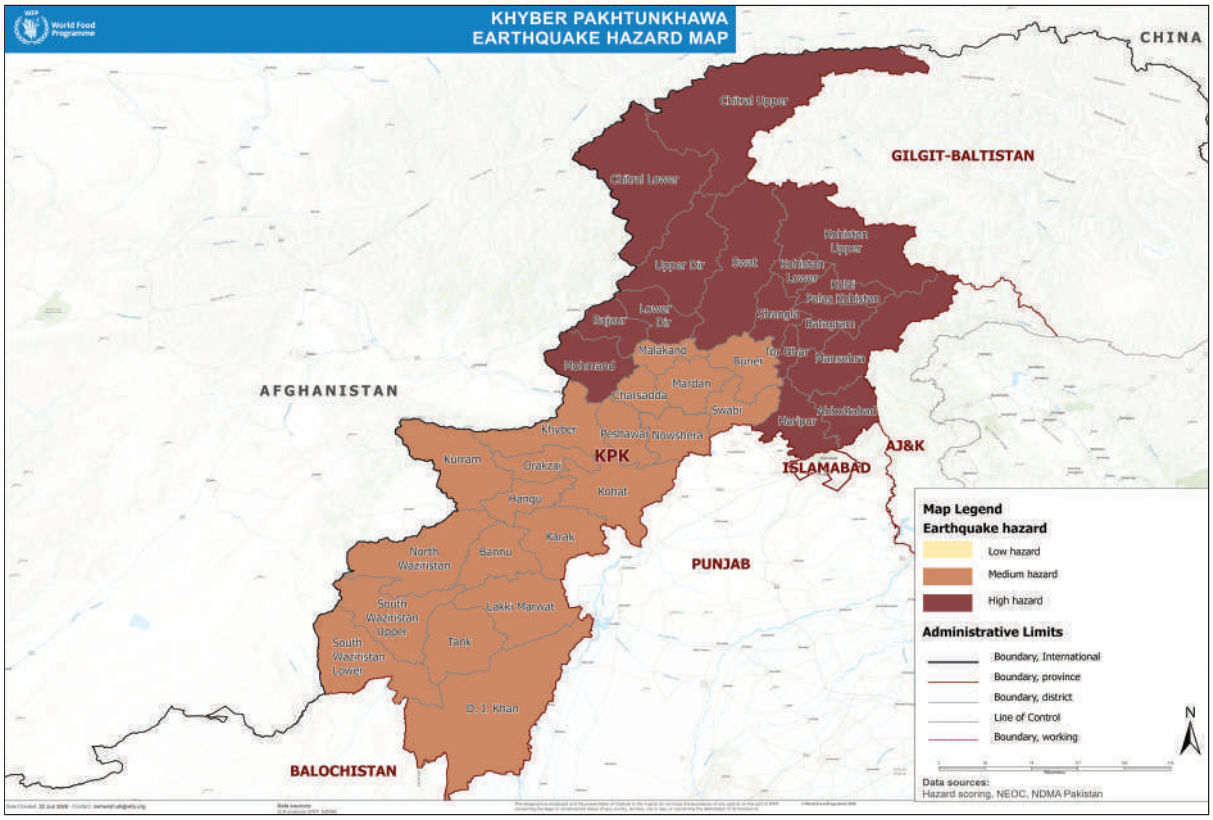


Figure 53: Khyber Pakhtunkhwa riverine hazard (Map)

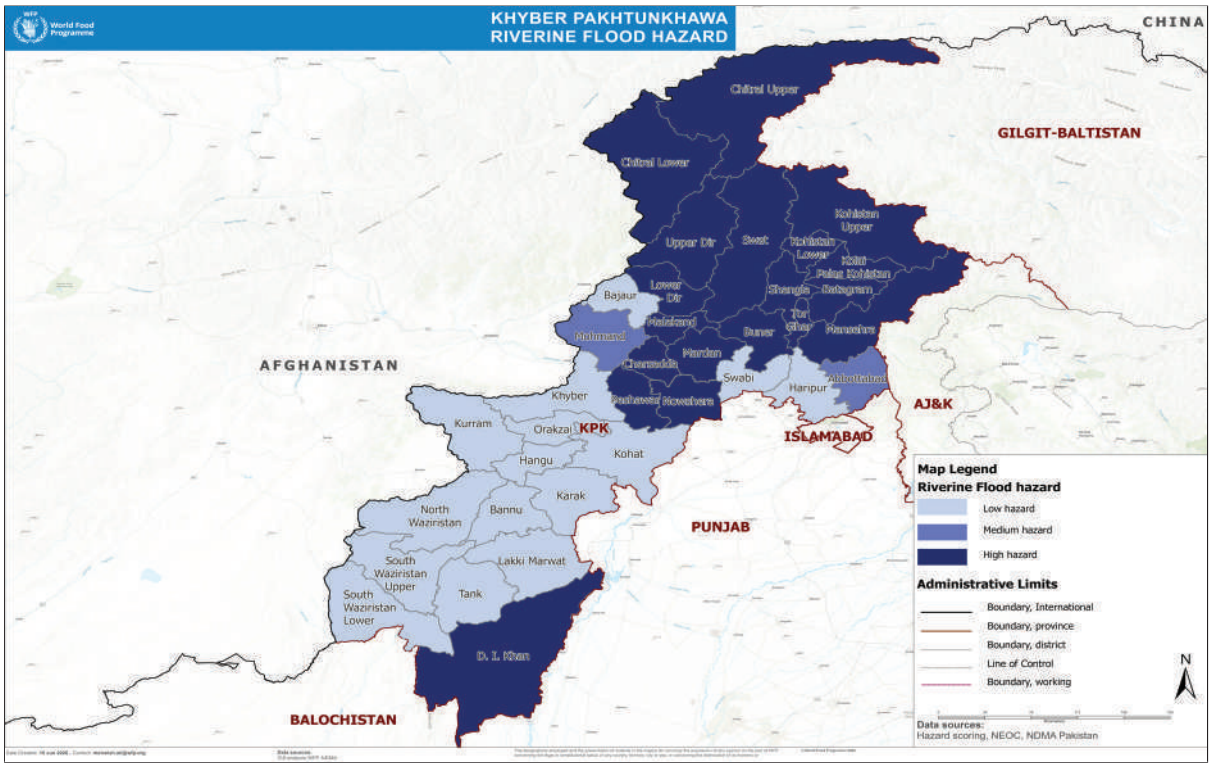
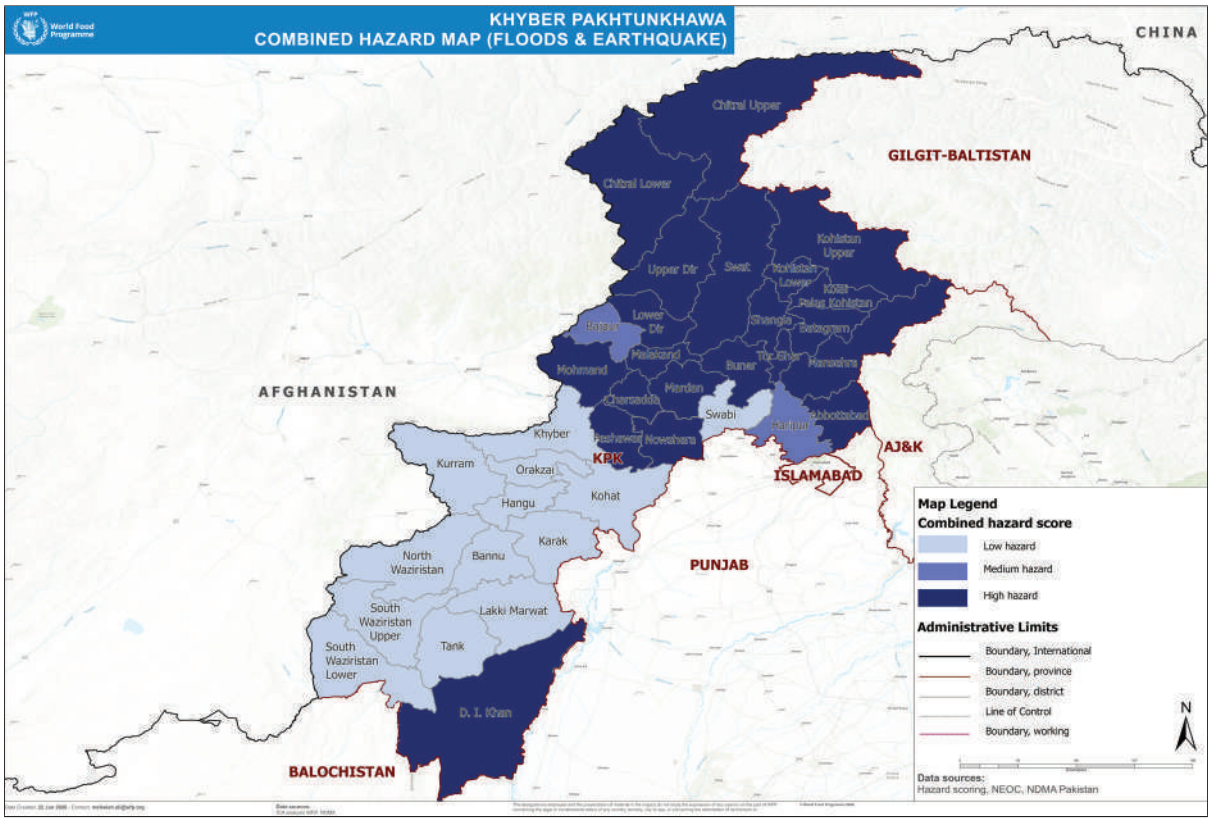


Figure 54: Khyber Pakhtunkhwa combined hazard (Map)



Maps for additional hazards affecting Khyber Pakhtunkhwa (KP) are presented below. These maps illustrate the spatial distribution of hazard risk for individual hazards and provide supplementary information to support a comprehensive understanding of the province's multi-hazard risk profile. The results can be used to identify vulnerable areas and inform disaster risk reduction, preparedness, and resilience-building efforts.

Figure 55: Khyber Pakhtunkhwa landslide hazard (Map)

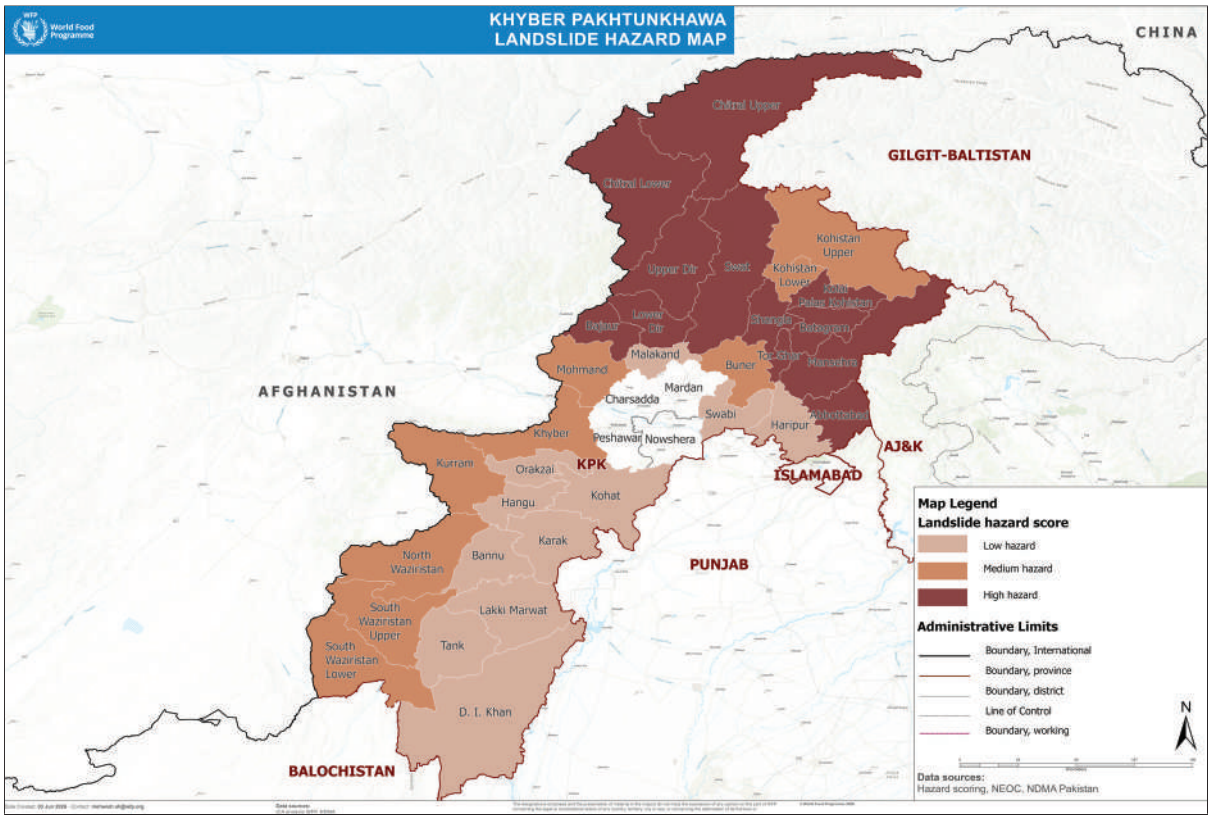


Figure 56: Khyber Pakhtunkhwa avalanche hazard (Map)

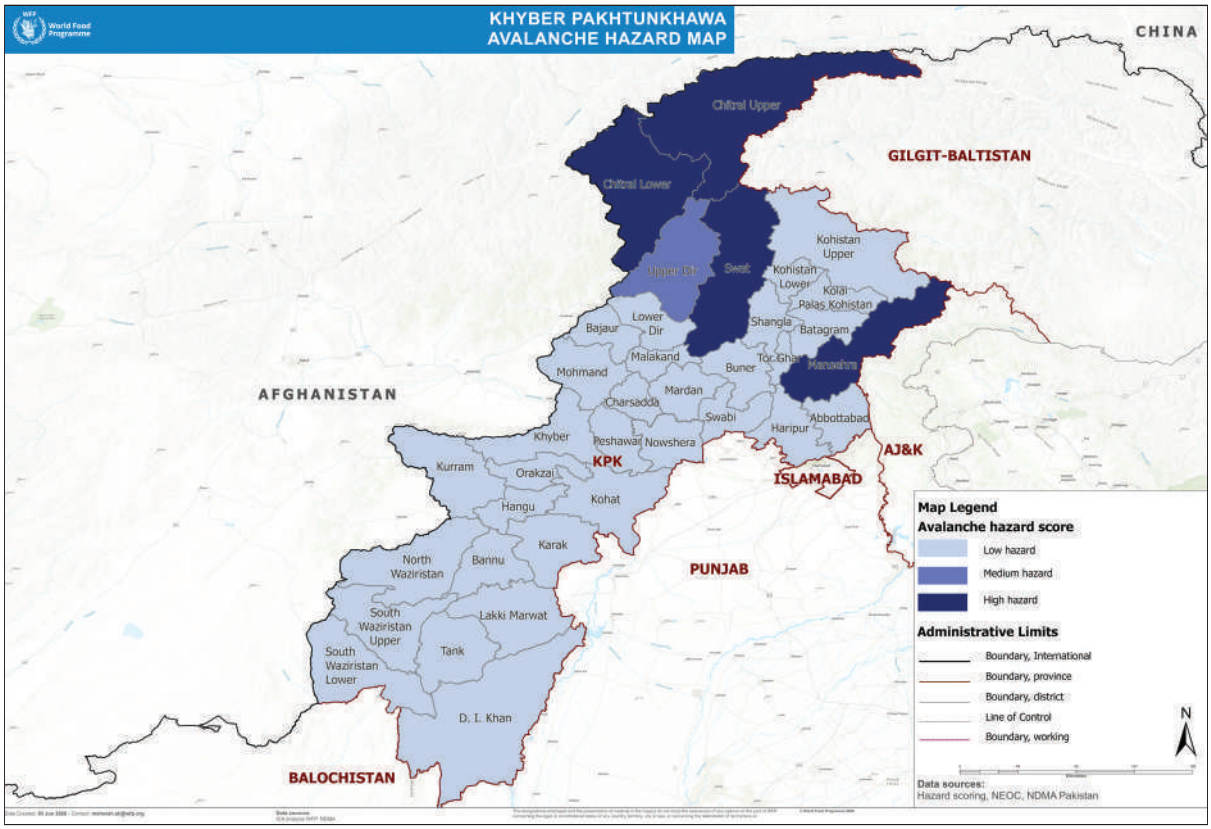




Figure 57: Khyber Pakhtunkhwa forest fire hazard (Map)

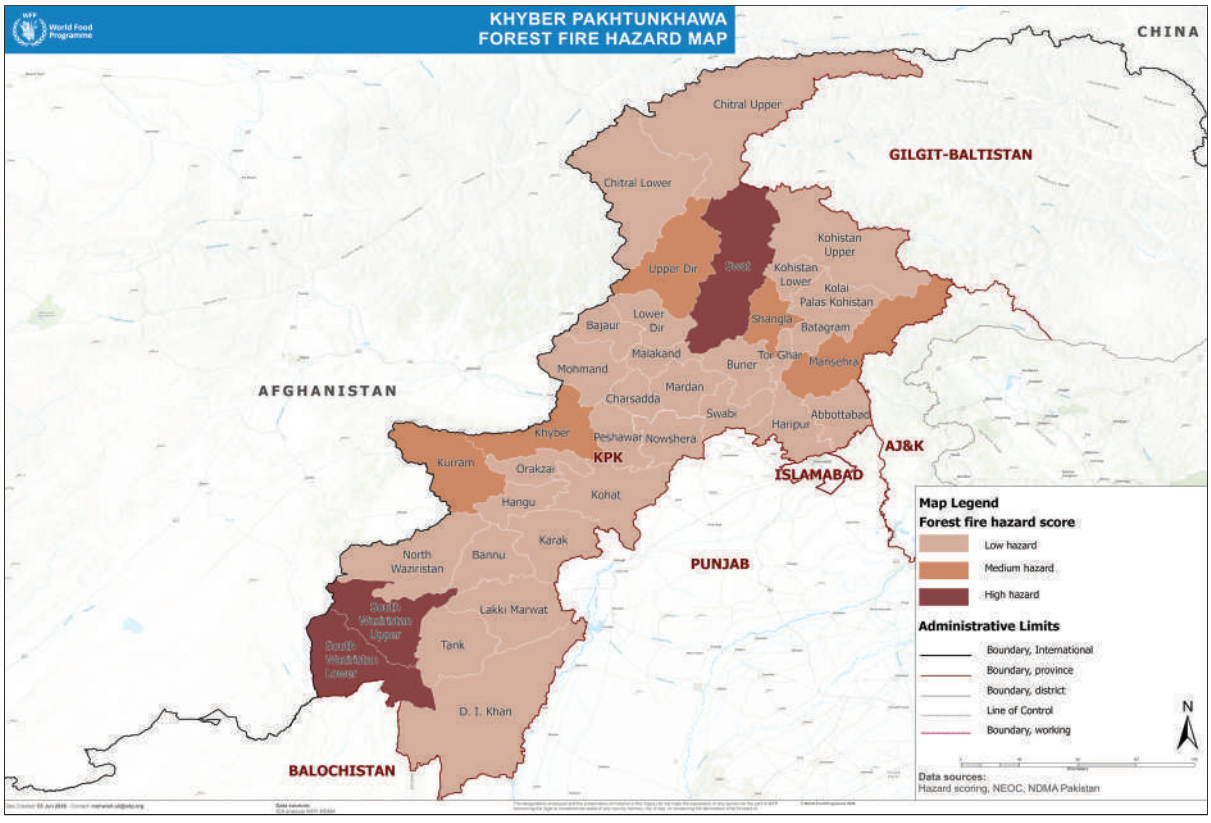


Table 21: ICA data table KP

			Estimated Food Insecure Population (2018-2024)			Food Insecurity	Natural hazardscore			ICA Categories		ADDITIONAL LENSES			
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity	Riverrine Flood risk	Earthquake risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Literacy rate	Prevalence of Wasting (NNS)	Prevalence of Stunting (NNS)
1	ABOTTABAD	1,419,072	267,052	238,404	295,700	Low	Medium	High	High	Area 4A	4	Low	High		
2	BAJAUR	1,287,960	289,164	222,688	355,641	Medium	Low	High	Medium	Area 2B	2	High	Low	Medium	Very High
3	BANNU	1,357,890	203,869	153,405	254,333	Low	Low	Medium	Low	Area 5	5	Medium	Medium	Very High	Very High
4	BATAGRAM	554,133	188,284	169,398	207,169	High	High	High	High	Area 1A	1	Medium	Low	Very High	Very High
5	BUNER	1,016,869	192,713	169,410	216,015	Low	High	Medium	High	Area 4A	4	Medium	Medium	Medium	Very High
6	CHARSADDA	1,835,504	479,522	397,937	561,106	High	High	Medium	High	Area 1A	1	Low	Medium	Very High	Very High
7	CHITRAL LOWER	320,407	122,683	71,210	174,155	High	High	High	High	Area 1A	1	Low	High		
8	CHITRAL UPPER	195,528	63,233	27,912	98,554	Medium	High	High	High	Area 2A	2	Low	High		
9	D. I. KHAN	1,829,811	299,141	118,663	479,619	Low	High	Medium	High	Area 4A	4	Medium	Medium	Medium	Very High
10	HANGU	528,902	106,311	59,078	153,543	Medium		Medium	Low	Area 3B	3	Medium	Medium	Medium	Very High
11	HARIPUR	1,174,783	238,545	223,561	253,529	Low	Low	High	Medium	Area 4B	4	Low	High		
12	KARAK	815,878	114,868	68,207	161,529	Low	Low	Medium	Low	Area 5	5	Low	High	High	Very High
13	KHYBER	1,146,267	269,288	79,666	458,911	Medium	Low	Medium	Low	Area 3B	3	Medium	Low	Very High	Very High
14	KOHAT	1,234,661	206,491	168,161	244,821	Low	Low	Medium	Low	Area 5	5	Low	High	Very High	Very High
15	KOHISTAN LOWER	340,017	63,422	31,332	95,511	Medium	High	High	High	Area 2A	2	High	Low	Medium	Very High
16	KOHISTAN UPPER	422,947	73,920	29,035	118,806	Medium	High	High	High	Area 2A	2	High	Low	Medium	Very High
17	KOLAI PALAS KOHIST	280,162	52,257	25,817	78,698	Medium	High	High	High	Area 2A	2	High	Low	Medium	Very High
18	KURRAM	785,434	131,984	78,543	185,425	Low	Low	Medium	Low	Area 5	5	Medium	Low	Very High	Very High
19	LAKKI MARWAT	1,040,856	119,498	101,811	137,185	Low	Low	Medium	Low	Area 5	5	Medium	Medium	Medium	Very High

			Estimated Food Insecure Population (2018-2024)			Food Insecurity	Natural hazardscore			ICA Categories		ADDITIONAL LENSES			
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity	Riverrine Flood risk	Earthquake risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Literacy rate	Prevalence of Wasting (NNS)	Prevalence of Stunting (NNS)
20	LOWER DIR	1,650,183	284,116	223,839	344,393	Medium	High	High	High	Area 2A	2	Low	High	Very High	Very High
21	MALAKAND	826,250	62,166	51,374	72,958	Low	High	Medium	High	Area 4A	4	Low	High	Very High	Very High
22	MANSEHRA	1,797,177	396,711	244,236	549,185	Medium	High	High	High	Area 2A	2	Low	High		
23	MARDAN	2,744,898	473,250	426,067	520,433	Low	High	Medium	High	Area 4A	4	Low	Medium	Very High	Very High
24	MOHMAND	553,933	242,824	123,693	361,955	High	Medium	High	High	Area 1A	1	High	Low	Very High	Very High
25	NORTH WAZIRISTAN	693,332	127,583	71,275	183,892	Medium		Medium	Low	Area 3B	3	High	Low		
26	NOWSHERA	1,740,705	174,867	146,594	203,140	Low	High	Medium	High	Area 4A	4	Low	Medium	Very High	Very High
27	ORAKZAI	387,561	99,501	38,330	160,672	Medium		Medium	Low	Area 3B	3	Medium	Low	High	Very High
28	PESHAWAR	4,758,762	1,413,282	533,933	2,292,632	Medium	High	Medium	High	Area 2A	2	Medium	Medium	Medium	Very High
29	SHANGLA	891,252	193,138	71,478	314,798	Medium	High	High	High	Area 2A	2	Medium	Low	Very High	Very High
30	SOUTH WAZIRISTAN	400,237	78,679	49,935	107,424	Medium	Low	Medium	Low	Area 3B	3	High	Low		
31	SOUTH WAZIRISTAN	488,438	307,657	60,940	131,097	Medium	Low	Medium	Low	Area 3B	3	High	Low		
32	SWABI	1,894,600	96,018	205,943	409,372	Low	Low	Medium	Low	Area 5	5	Low	High	Very High	Very High
33	SWAT	2,687,384	682,761	383,283	982,239	Medium	High	High	High	Area 2A	2	Medium	Medium	Medium	Very High
34	TANK	470,293	130,924	109,756	152,093	High	Low	Medium	Low	Area 3A	3	Medium	Medium	Medium	Very High
35	TOR GHAR	200,445	73,798	32,442	115,154	Medium	High	High	High	Area 2A	2	Medium	Low	Very High	Very High
36	UPPER DIR	1,083,566	391,090	187,240	594,939	Medium	High	High	High	Area 2A	2	Medium	Medium	High	Very High
		40,856,097		**5,394,600**	**12,026,623**										



6.2.3 Punjab

For Punjab, **riverine floods and droughts** were identified as the two primary natural hazards. The following maps present the hazard risk for riverine floods and droughts separately, as well as a combined hazard score derived from the two hazards reclassified into low, medium and high categories to identify areas with elevated multi-hazard risk and support disaster risk reduction, preparedness, and resilience planning.

Figure 58: Punjab riverine flood hazard (Map)

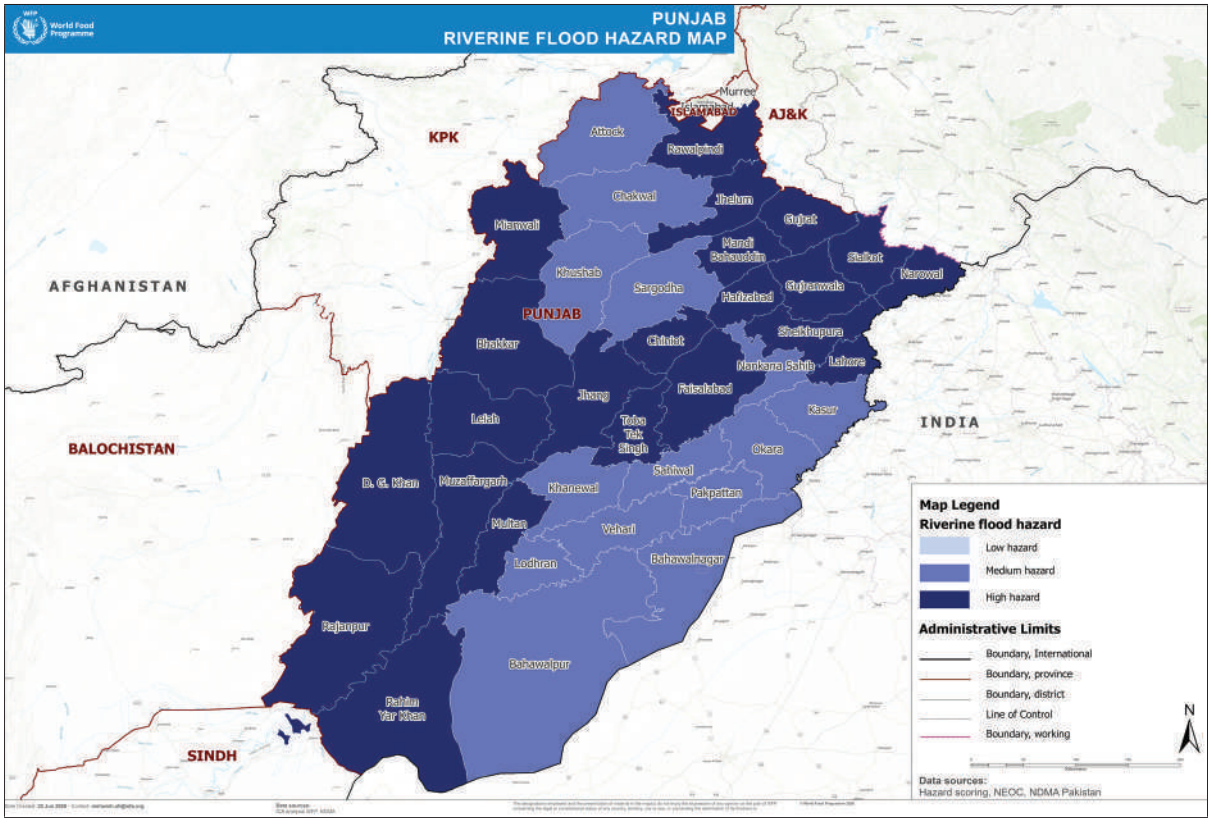


Figure 59: Drought hazard (Map)

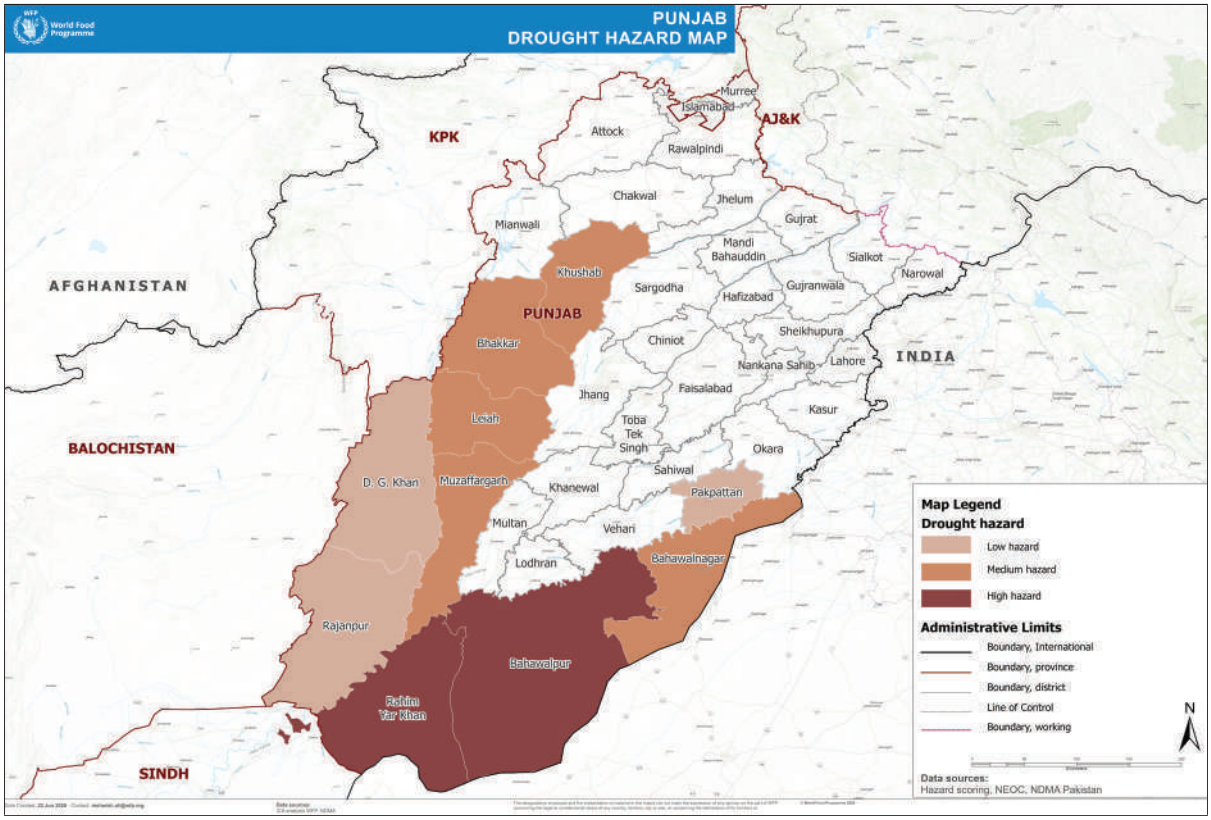
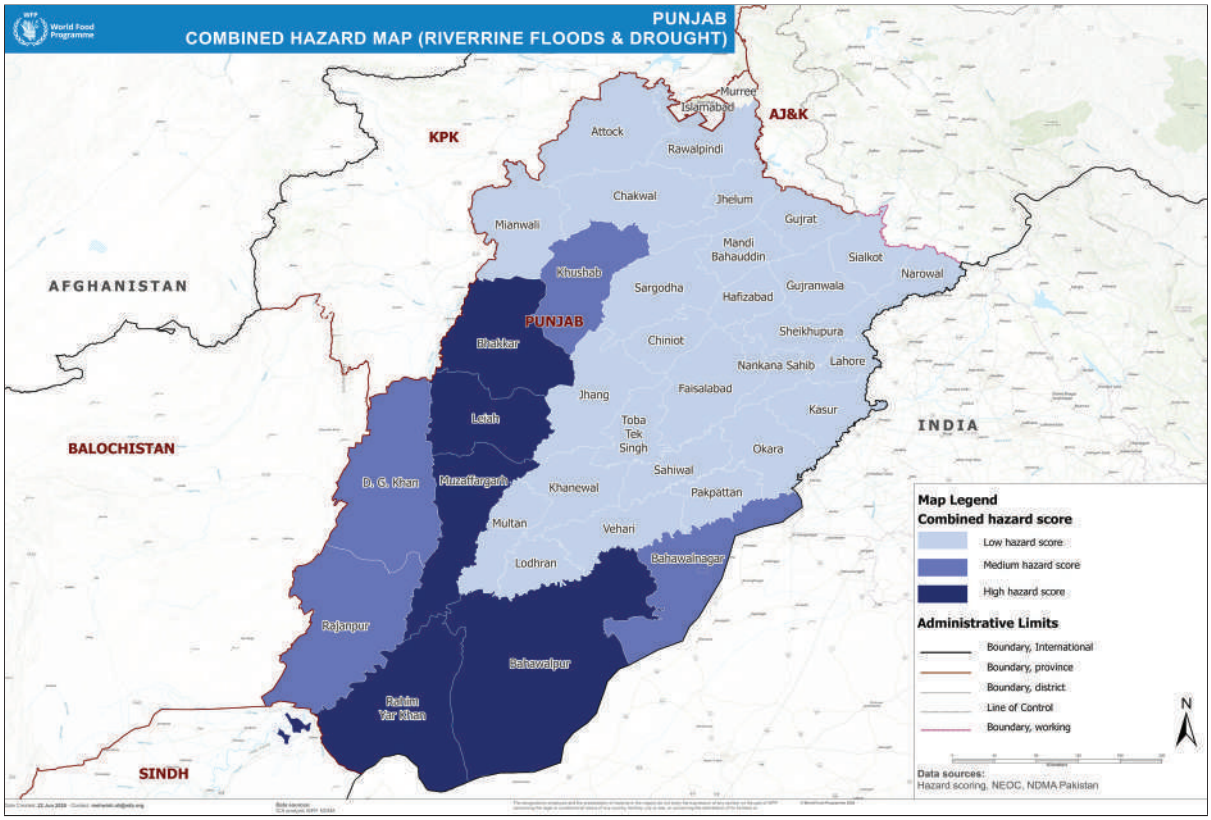


Figure 60: Punjab combined hazard (Map)



Maps for additional hazards for the province of Punjab are presented below.

Figure 61: Punjab earthquake hazard (Map)

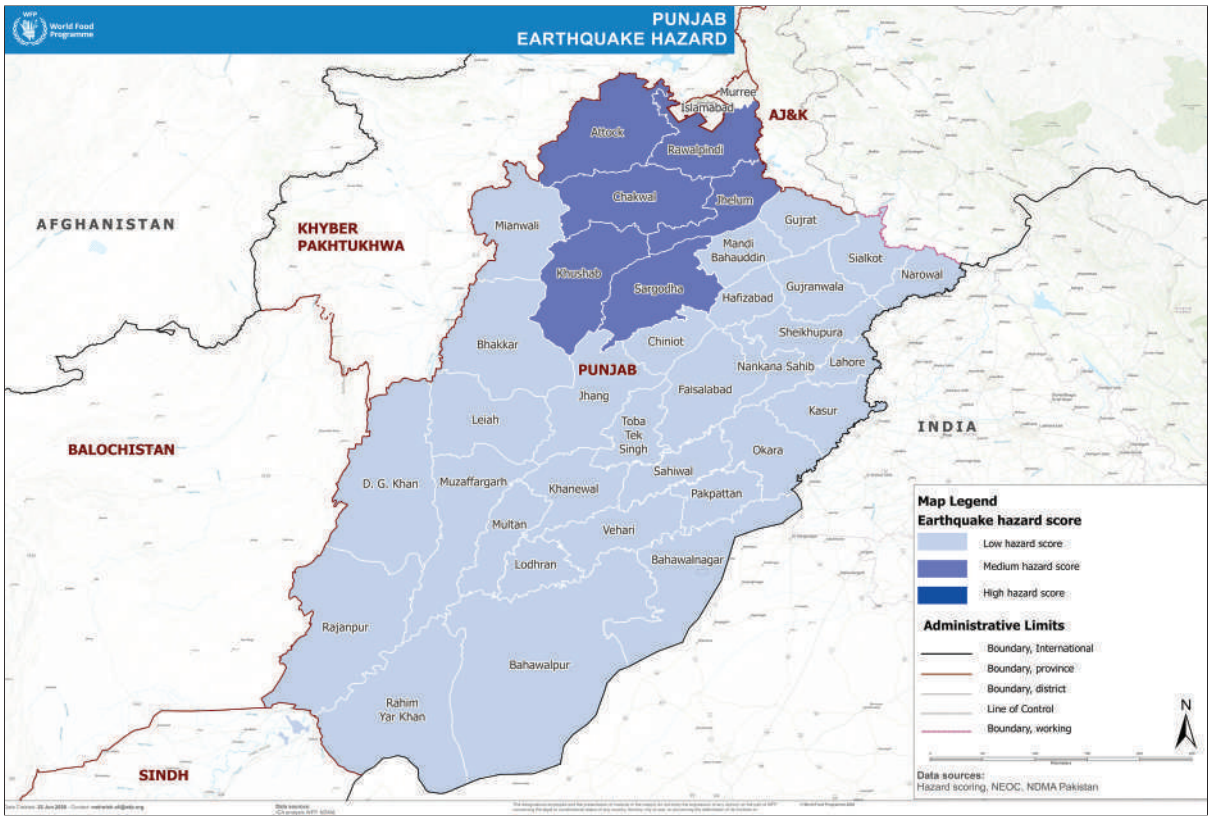


Figure 62: Punjab smog hazard (Map)

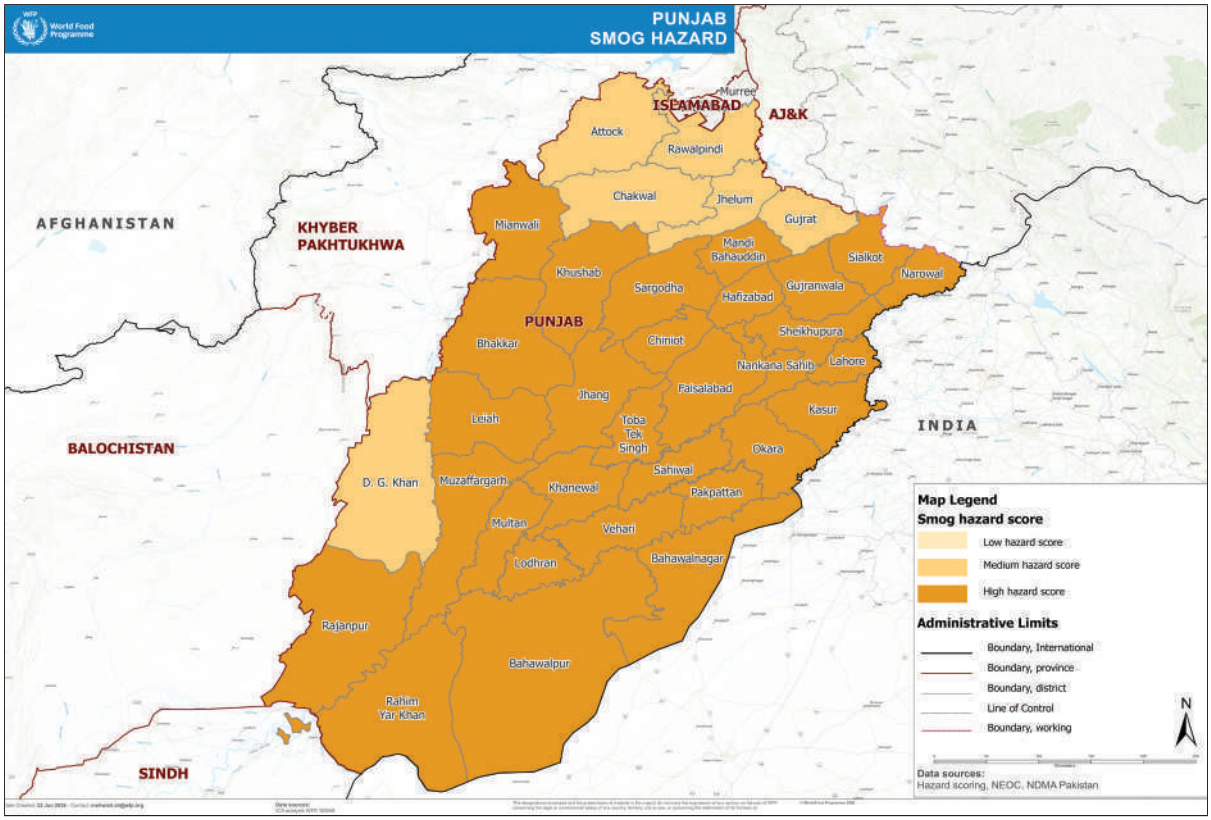


Table 22: ICA data table Punjab

			Estimated Population vulnerable to Food Insecurity			Food insecurity	Natural Hazards			ICA Categories		ADDITIONAL LENSES				
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity based on threshold	Riverrine floods risk	Drought risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Literacy rate	Unemployment rate	Prevalence of Wasting (NNS)	Prevalence of Stunting(NNS)
1	ATTOCK	2,170,423	205,591	150,410	260,771	Low	Medium	Low	Low	Area 5	5	Low	High	Low	Very High	Very High
2	BAHAWALNAGAR	3,550,342	846,823	820,484	873,161	High	Medium	Medium	Medium	Area 1B	1	Low	High	Low	Medium	Very High
3	BAHAWALPUR	4,284,964	1,295,438	910,555	1,680,322	High	Medium	High	High	Area 1A	1	Low	Medium	Low	High	Very High
4	BHAKKAR	1,957,470	404,136	292,838	515,435	Medium	High	Medium	High	Area 2A	2	Low	Medium	Medium	Very High	Very High
5	CHAKWAL	1,734,854	269,678	226,225	313,131	Low	Medium	Low	Low	Area 5	5	Low	High	Low	Medium	Very High
6	CHINIOT	1,563,024	276,913	208,038	345,787	Low	High	Low	Low	Area 5	5	Low	Medium	Low	Very High	Very High
7	DERA GHAZI KHAN	3,393,705	814,015	743,900	884,131	High	High	Low	Medium	Area 1B	1	Medium	Medium	Medium	High	Very High
8	FAISALABAD	9,075,819	1,617,872	786,874	2,448,871	Low	High	Low	Low	Area 5	5	Low	High	Low	Very High	Very High
9	GUJRANWALA	5,959,750	1,246,637	627,562	1,865,713	Medium	High	Low	Low	Area 3B	3	Low	High	Low	Medium	Very High
10	GUJRAT	3,219,375	242,521	141,653	343,389	Low	High	Low	Low	Area 5	5	Low	High	Low	Medium	High
11	HAFIZABAD	1,319,909	221,653	128,559	314,747	Low	High	Low	Low	Area 5	5	Low	High	Low	Very High	High
13	JHANG	3,077,720	687,510	578,814	796,206	High	High	Low	Low	Area 3A	3	Low	High	Low	Very High	Very High
14	JHELUM	1,382,308	208,092	184,647	231,537	Low	High	Low	Low	Area 5	5	Low	High	Low	Medium	Very High
15	KASUR	4,084,286	1,447,241	1,176,683	1,717,799	High	Medium	Low	Low	Area 3A	3	Low	High	Low	Medium	Very High
16	KHANEWAL	3,364,077	988,843	836,310	1,141,377	High	Medium	Low	Low	Area 3A	3	Low	High	Low	Very High	Very High
17	KHUSHAB	1,501,089	361,334	191,689	530,980	Medium	Medium	Medium	Medium	Area 2B	2	Low	High	Low	Very High	Very High
18	LAHORE	13,004,135	2,922,759	2,335,543	3,509,976	Medium	High	Low	Low	Area 3B	3	Low	High	Low	Medium	Very High
19	LEIAH	2,102,386	690,351	541,995	838,708	High	High	Medium	High	Area 1A	1	Low	High	Medium	Very High	Very High
20	LODHRAN	1,928,299	692,615	438,881	946,349	High	Medium	Low	Low	Area 3A	3	Low	Medium	Medium	Very High	Very High
21	MANDI BAHAUDDIN	1,829,486	293,991	174,350	413,633	Low	High	Low	Low	Area 5	5	Low	High	Low	Medium	Very High
22	MIANWALI	1,798,268	204,957	202,933	206,981	Low	High	Low	Low	Area 5	5	Low	High	Medium	Very High	Very High

			Estimated Population vulnerable to Food Insecurity			Food insecurity	Natural Hazards			ICA Categories		ADDITIONAL LENSES				
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity based on threshold	Riverrine floods risk	Drought risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Literacy rate	Unemployment rate	Prevalence of Wasting (NNS)	Prevalence of Stunting(NNS)
23	MULTAN	5,362,305	962,655	905,157	1,020,153	Low	High	Low	Low	Area 5	5	Low	High	Medium	High	Very High
24	MUZAFFARGARH	5,015,325	1,651,939	1,246,810	2,057,069	High	High	Medium	High	Area 1A	1	Medium	Medium	Medium	Very High	Very High
25	NANKANA SAHIB	1,634,871	282,589	209,754	355,424	Low	Medium	Low	Low	Area 5	5	Low	High	Low	Very High	Very High
26	NAROWAL	1,950,954	259,939	251,088	268,790	Low	High	Low	Low	Area 5	5	Low	High	Medium	Medium	Very High
27	OKARA	3,515,490	347,383	146,947	547,819	Low	Medium	Low	Low	Area 5	5	Low	High	Low	High	Very High
28	PAKPATTAN	2,136,170	523,212	182,002	864,423	Medium	Medium	Low	Low	Area 3B	3	Low	High	Low	Very High	Very High
29	RAHIM YAR KHAN	5,564,703	1,922,157	1,195,855	2,648,460	High	High	High	High	Area 1A	1	Medium	Medium	Medium	Very High	Very High
30	RAJANPUR	2,381,049	537,774	404,540	671,007	Medium	High	Low	Medium	Area 2B	2	Medium	Low	Medium	Very High	Very High
31	RAWALPINDI	6,118,911	1,069,256	575,790	1,562,722	Low	High	Low	Low	Area 5	5	Low	High	Low	Medium	Very High
32	SAHIWAL	2,881,811	280,243	225,646	334,841	Low	Medium	Low	Low	Area 5	5	Low	High	Low	Very High	Very High
33	SARGODHA	4,334,448	603,812	497,641	709,983	Low	Medium	Low	Low	Area 5	5	Low	High	Medium	High	Very High
34	SHEIKHUPURA	4,049,418	933,582	713,507	1,153,656	Medium	High	Low	Low	Area 3B	3	Low	High	Low	Medium	Very High
35	SIALKOT	4,499,394	724,782	434,192	1,015,372	Low	High	Low	Low	Area 5	5	Low	High	Low	Medium	High
36	TOBA TEK SINGH	2,511,963	396,439	378,405	414,474	Low	High	Low	Low	Area 5	5	Low	High	Low	Very High	Very High
37	VEHARI	3,430,421	735,781	453,502	1,018,060	Medium	Medium	Low	Low	Area 3B	3	Low	High	Low	Very High	Very High



6.2.4 Sindh

For Sindh, **riverine floods and droughts** were identified as the two primary natural hazards. The following maps present the hazard risk for riverine floods and droughts separately, as well as a combined hazard score derived from the two hazards. The combined hazard index is reclassified into low, medium and high risk categories to highlight areas exposed to multiple hazards and support risk-informed planning, disaster preparedness, and resilience-building efforts.

Figure 63: Sindh riverine flood hazard (Map)

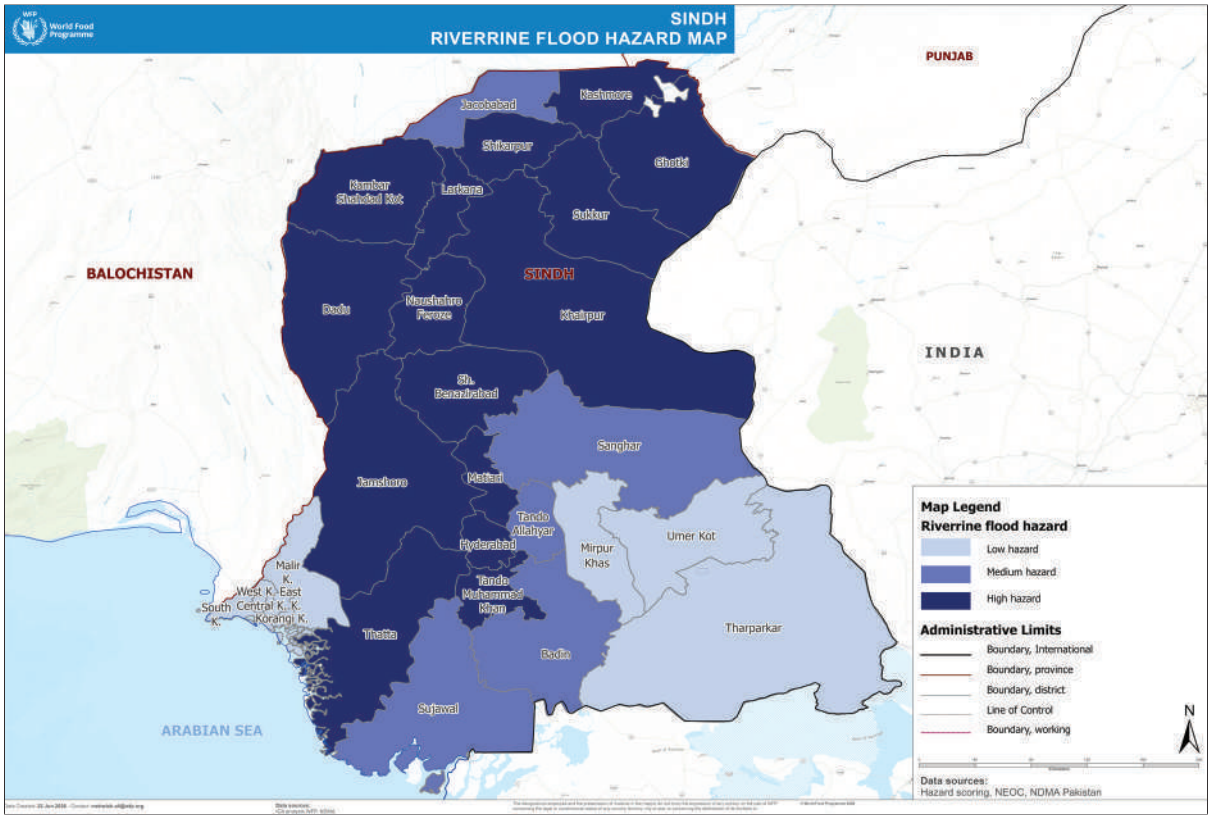


Figure 64: Sindh drought hazard (Map)

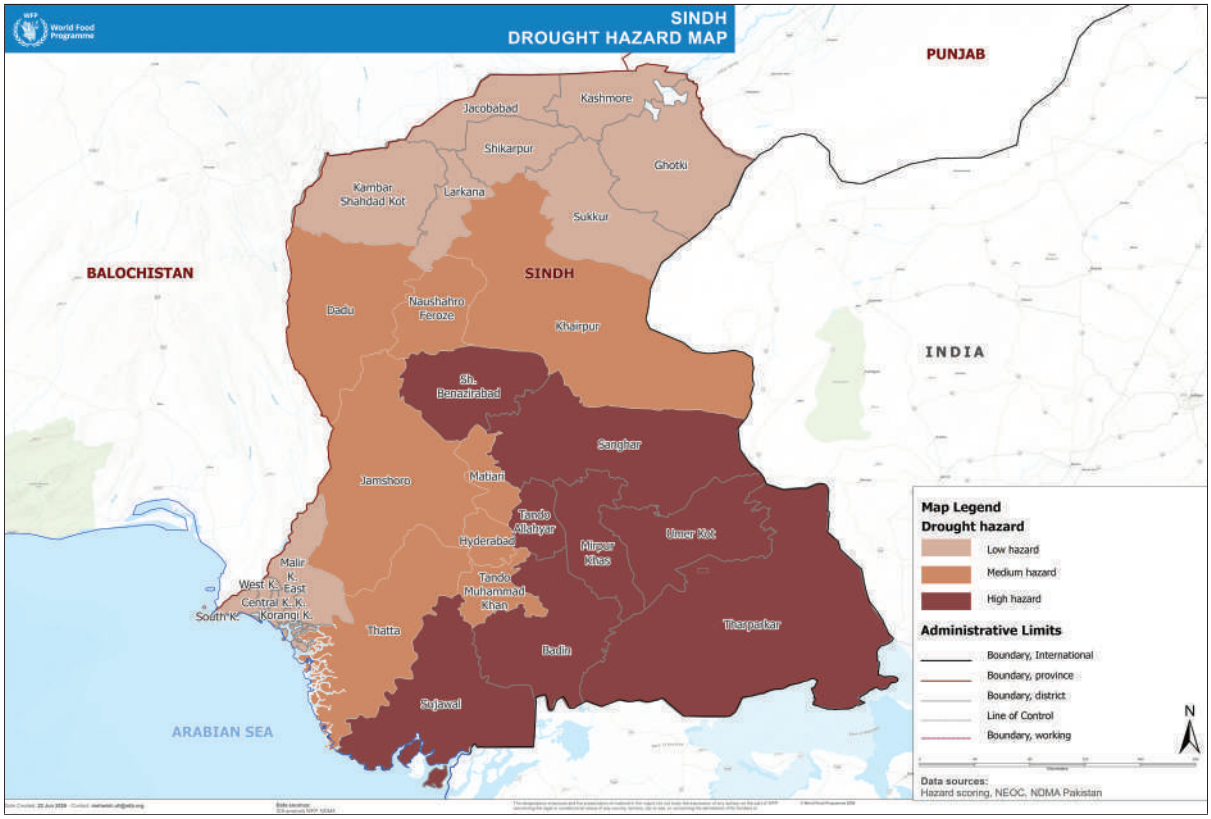
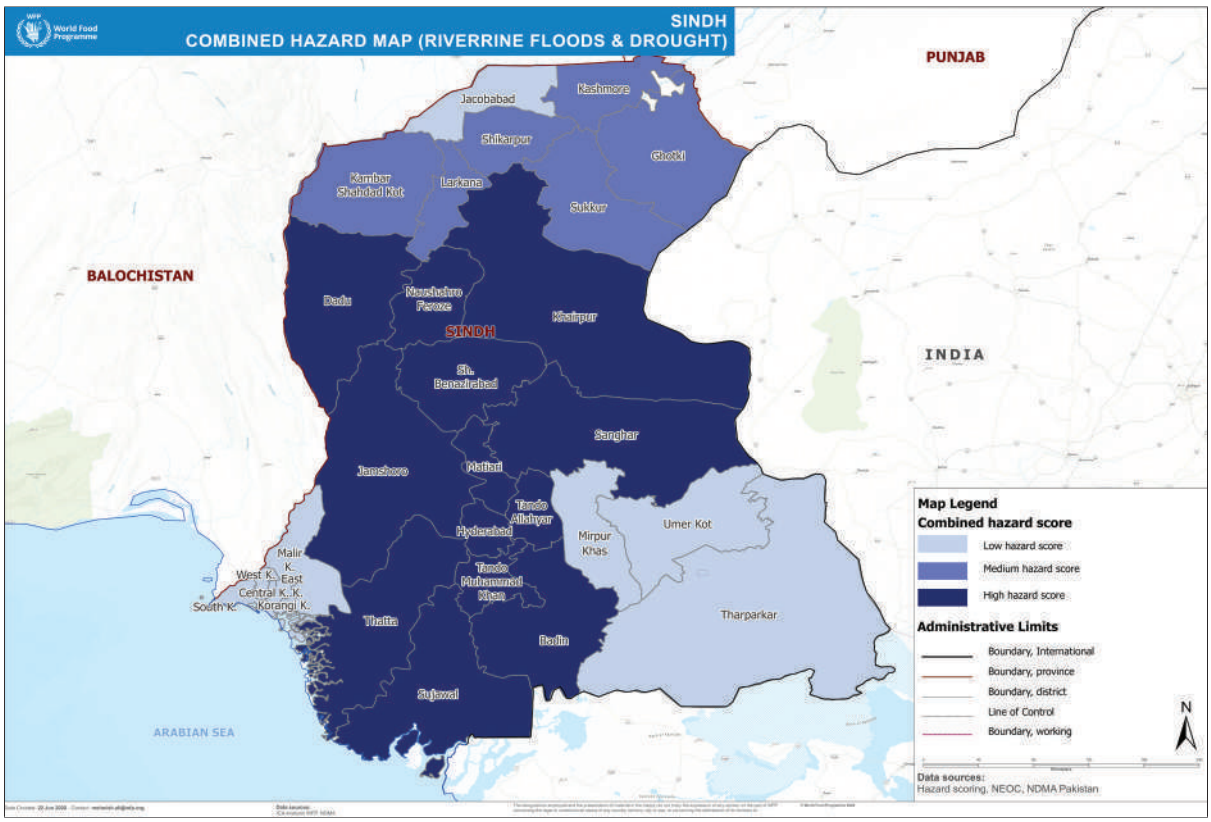


Figure 65: Sindh combined hazard (Map)



Maps for additional hazards affecting Sindh are presented below. These maps illustrate the spatial distribution of hazard risk for individual hazards beyond the primary hazards of riverine flooding and drought. Together, they provide a broader understanding of the province's multi-hazard risk profile and support disaster risk reduction, preparedness, and resilience planning.

Figure 66: Sindh smog hazard (Map)

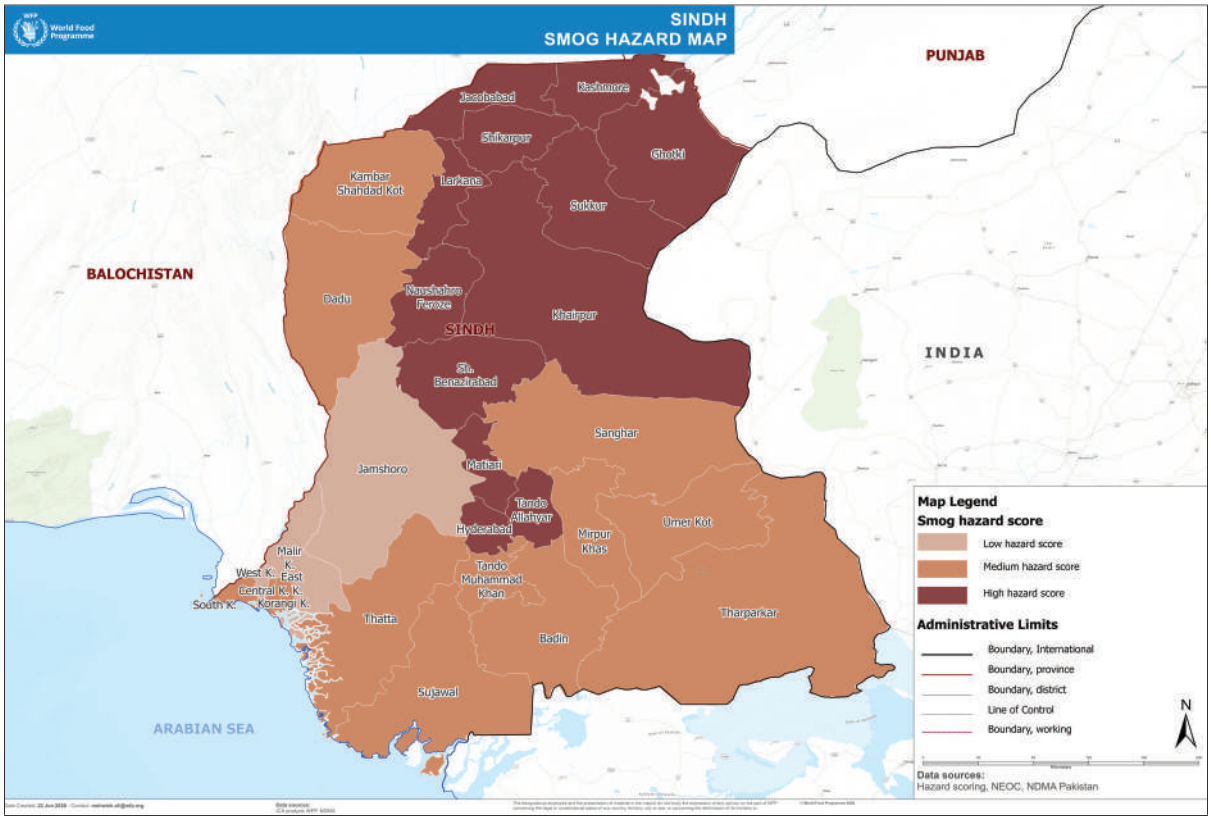


Figure 67: Sindh cyclone hazard (Map)

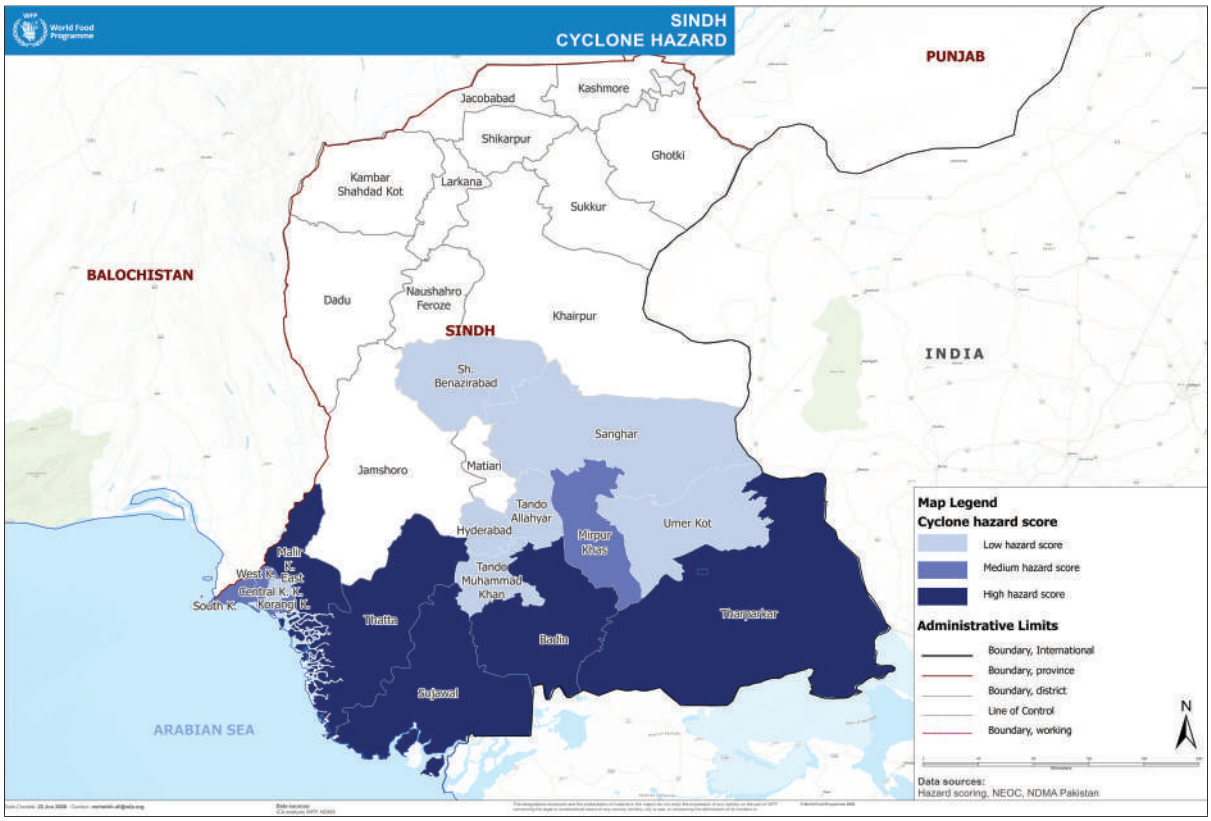


Table 23: ICA data table Sindh

			Estimated Population vulnerable to Food Insecurity			Food insecurity	Natural Hazards			ICA Categories		ADDITIONAL LENSES				
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity based on threshold	Riverrine flood risk	Drought risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Literacy rate	Unemployment rate	Prevalence of wasting (NNS)	Prevalence of Stunting (NNS)
1	BADIN	1,947,081	935,736	574,584	1,296,888	High	Medium	High	High	Area 1A	1	High	Low	Medium	Very High	Very High
2	CENTRAL KARACHI	3,822,325	546,981	329,102	764,860	Low	Low	Low	Low	Area 5	5	Low	High	Low	Very High	High
3	DADU	1,742,320	626,288	533,673	718,903	High	High	Medium	High	Area 1A	1	Medium	Medium	High	Very High	Very High
4	EAST KARACHI	3,950,031	617,167	399,743	834,590	Low	Low	Low	Low	Area 5	5	Low	High	Low	Very High	High
5	GHOTKI	1,772,609	445,349	241,607	649,092	Medium	High	Low	Medium	Area 2B	2	Medium	Medium	High	Very High	Very High
6	HYDERABAD	2,432,540	746,682	403,558	1,089,806	Medium	High	Medium	High	Area 2A	2	Low	High	Medium	Very High	Very High
7	JACOBABAD	1,174,097	483,018	375,465	590,571	High	Medium	Low	Low	Area 3A	3	High	Medium	Medium	Very High	Very High
8	JAMSHORO	1,117,308	557,603	464,130	651,076	High	High	Medium	High	Area 1A	1	Medium	Medium	Medium	Very High	Very High
9	KAMBAR SHAHDAD KOT	1,514,869	525,463	396,971	653,956	High	High	Low	Medium	Area 1B	1	Medium	Medium	Medium	Very High	Very High
10	KASHMORE	1,233,957	404,311	332,922	475,700	Medium	High	Low	Medium	Area 2B	2	High	Low	High	Very High	Very High
11	KHAIRPUR	2,597,535	841,049	555,872	1,126,225	Medium	High	Medium	High	Area 2A	2	Medium	Medium	High	Very High	Very High
12	KORANGI KARACHI	3,128,971	524,681	239,679	809,682	Low	Low	Low	Low	Area 5	5	Low	High	Low	Very High	Very High
13	LARKANA	1,784,453	470,437	338,868	602,007	Low	High	Low	Medium	Area 4B	4	Medium	Medium	Medium	Very High	Very High
14	MALIR KARACHI	2,403,959	533,869	225,972	841,766	Low	Low	Low	Low	Area 5	5	Medium	High	Low	Very High	Very High
15	MATIARI	849,383	234,839	202,613	384,485	Medium	High	Medium	High	Area 2A	2	Medium	Medium	Medium	Very High	Very High

			Estimated Population vulnerable to Food Insecurity			Food insecurity	Natural Hazards			ICA Categories		ADDITIONAL LENSES				
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity based on threshold	Riverrine flood risk	Drought risk	Combined hazard score	ICA_Areas	ICA Category	Out of school children	Literacy rate	Unemployment rate	Prevalence of wasting (NNS)	Prevalence of Stunting (NNS)
16	MIRPUR KHAS	1,681,386	623,712	403,196	844,228	High	Low	High	Low	Area 3A	3	Medium	Medium	Medium	Very High	Very High
17	NAUSHAHRO FEROZE	1,777,082	636,250	407,485	865,014	High	High	Medium	High	Area 1A	1	Low	High	Medium	Very High	Very High
18	SANGHAR	2,308,465	782,890	399,595	1,166,184	Medium	Medium	High	High	Area 2A	2	Medium	Medium	Medium	Very High	Very High
19	SHAHEED BENAZIR ABAD	1,845,102	889,389	620,508	1,158,271	High	High	High	High	Area 1A	1	Medium	Medium	Medium	Very High	Very High
20	SHIKARPUR	1,386,330	407,593	288,565	526,621	Medium	High	Low	Medium	Area 2B	2	High	Medium	Medium	Very High	Very High
21	SOUTH KARACHI	2,329,764	369,948	204,553	535,343	Low	Low	Low	Low	Area 5	5	Low	High	Low	Very High	Very High
22	SUJAWAL	839,292	384,824	203,025	566,623	Medium	Medium	High	High	Area 2A	2	High	Low	High	Very High	Very High
23	SUKKUR	1,639,897	341,190	254,676	427,704	Low	High	Low	Medium	Area 4B	4	Medium	High	Medium	Very High	Very High
24	TANDO ALLAHYAR	922,012	425,911	301,498	550,325	High	Medium	High	High	Area 1A	1	High	Low	Medium	Very High	Very High
25	TANDO MUHAMMAD KHAN	726,119	327,262	185,088	469,436	Medium	High	Medium	High	Area 2A	2	High	Low	Medium	Very High	Very High
26	THARPARKAR	1,778,407	489,267	124,133	854,401		Low	High	Low	#N/A	0	High	Low	Medium	Very High	Very High
27	THATTA	1,083,191	544,444	293,220	795,669	Medium	High	Medium	High	Area 2A	2	High	Low	High	Very High	Very High
28	UMER KOT	1,159,831	496,881	292,741	701,020	Medium	Low	High	Low	Area 3B	3	Medium	Low	Medium	Very High	Very High
29	WEST KARACHI	2,679,380	565,037	315,363	814,711	Low	Low	Low	Low	Area 5	5	Low	High	Low	Very High	Very High



6.2.5 Azad Jammu & Kashmir (AJ&K)

For AJ&K, **rain induced floods and earthquakes** were identified as the two primary natural hazards. The following maps present the hazard risk for rain induced floods and earthquakes separately, as well as a combined hazard score derived from the two hazards. The combined hazard index is reclassified into low, medium and high categories to highlight areas exposed to multiple hazards and support risk-informed planning, disaster preparedness, and resilience-building efforts.

Figure 68: AJ&K earthquake hazard (Map)

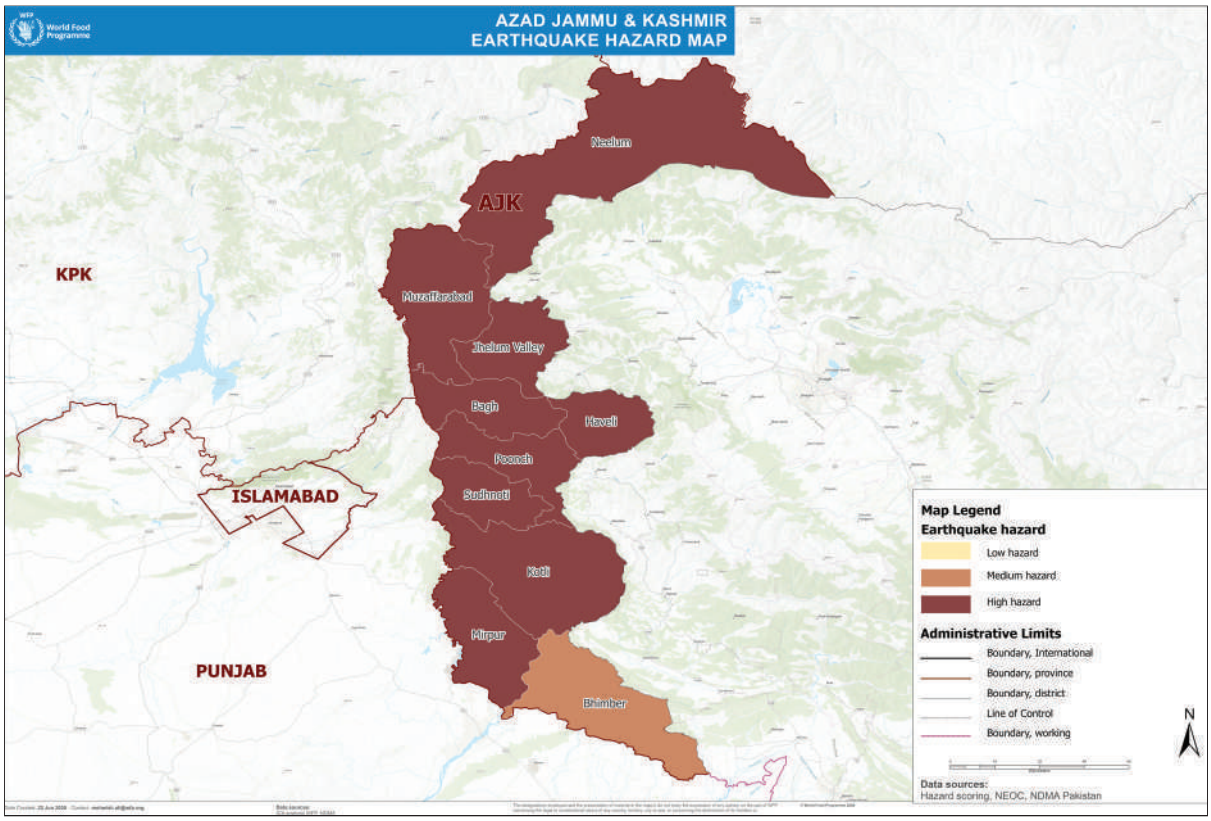


Figure 69: AJ&K rain induced floods (Map)

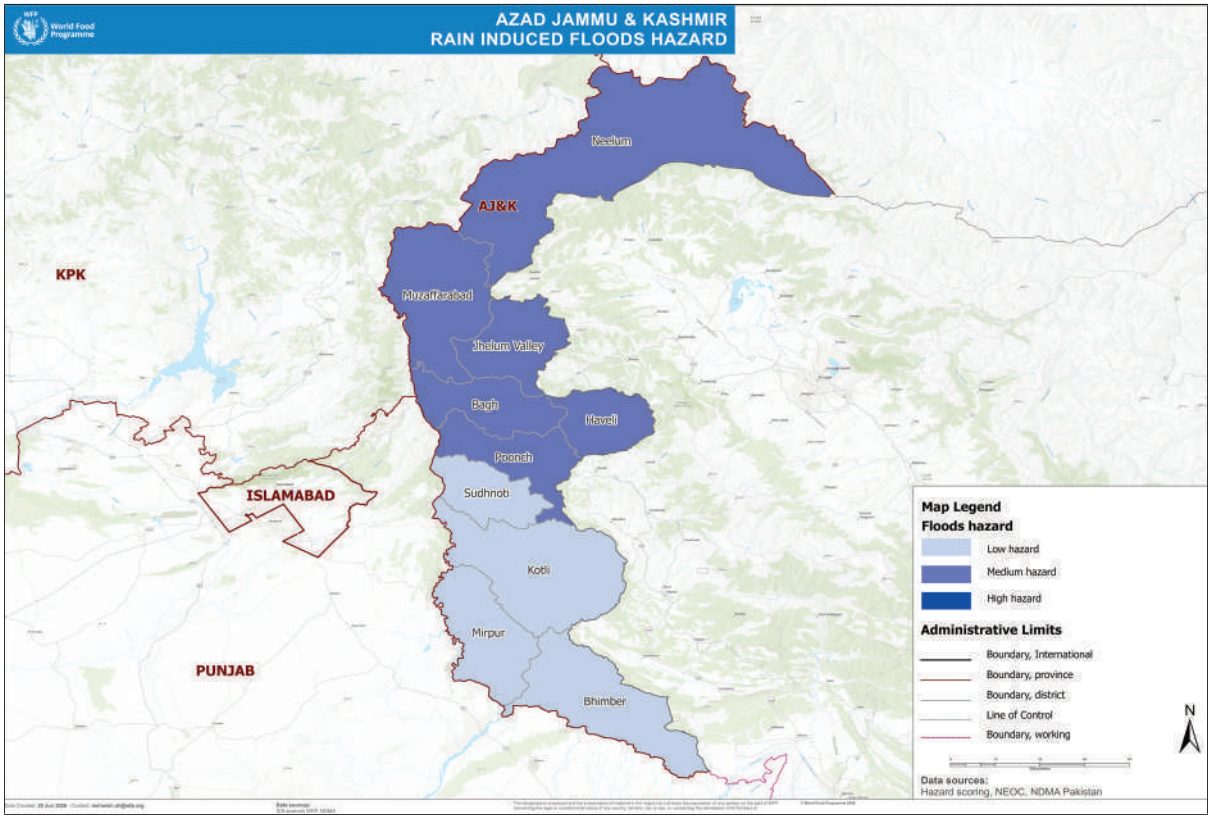
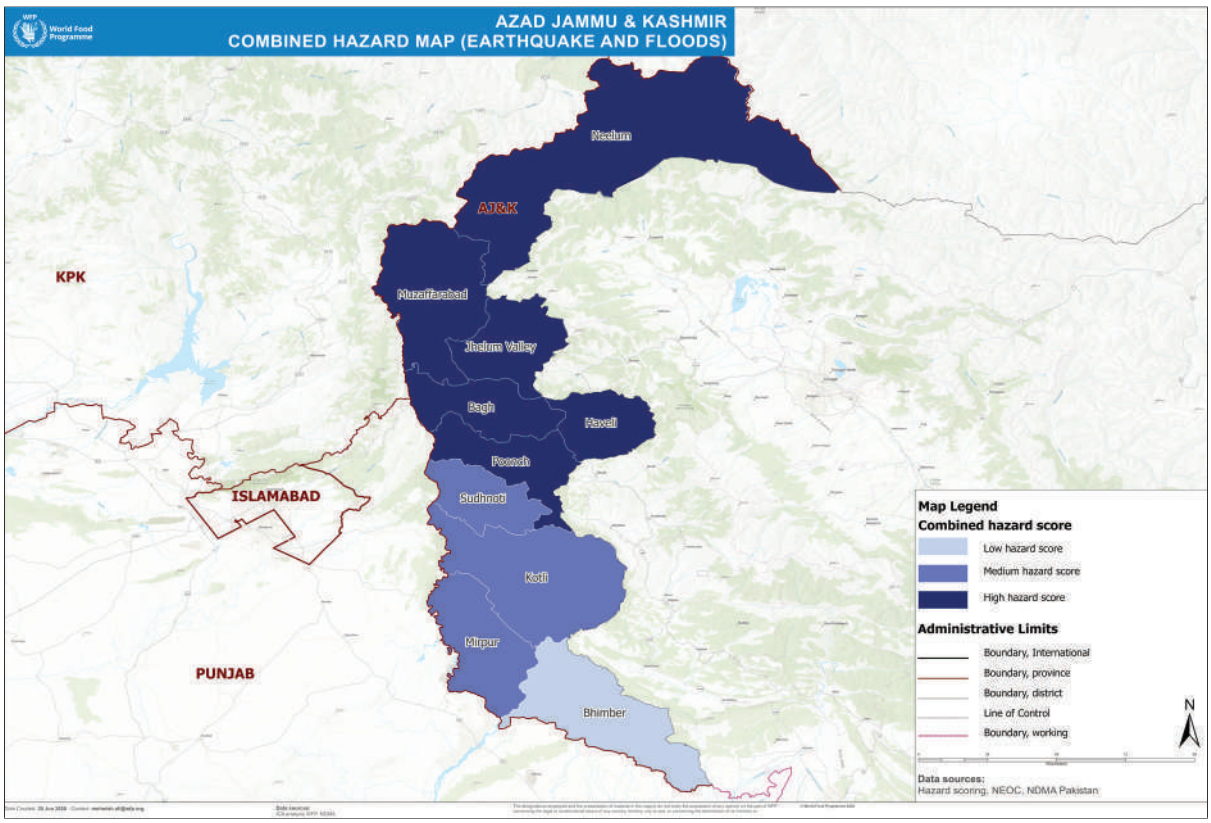


Figure 70: AJ&K combined hazard (Map)



Maps for additional hazards affecting Azad Jammu and Kashmir (AJ&K) are presented below. These maps illustrate the spatial distribution of risk associated with individual hazards beyond the primary hazards of rain-induced flooding and earthquakes. Together, they provide a comprehensive overview of the region's multi-hazard risk profile and support disaster risk reduction, preparedness, and resilience planning.

Figure 71: Landslide hazard AJ&K (Map)

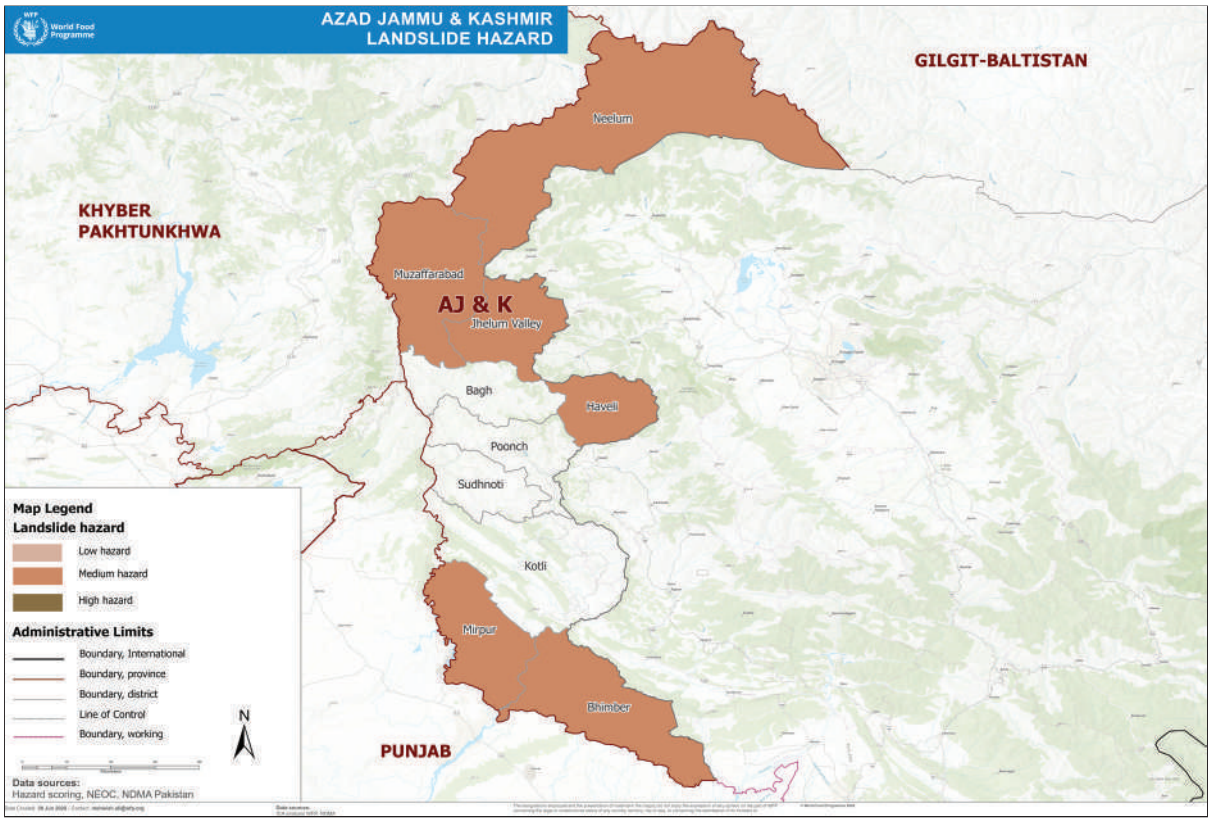




Figure 72: Forest fire hazard AJ&K (Map)

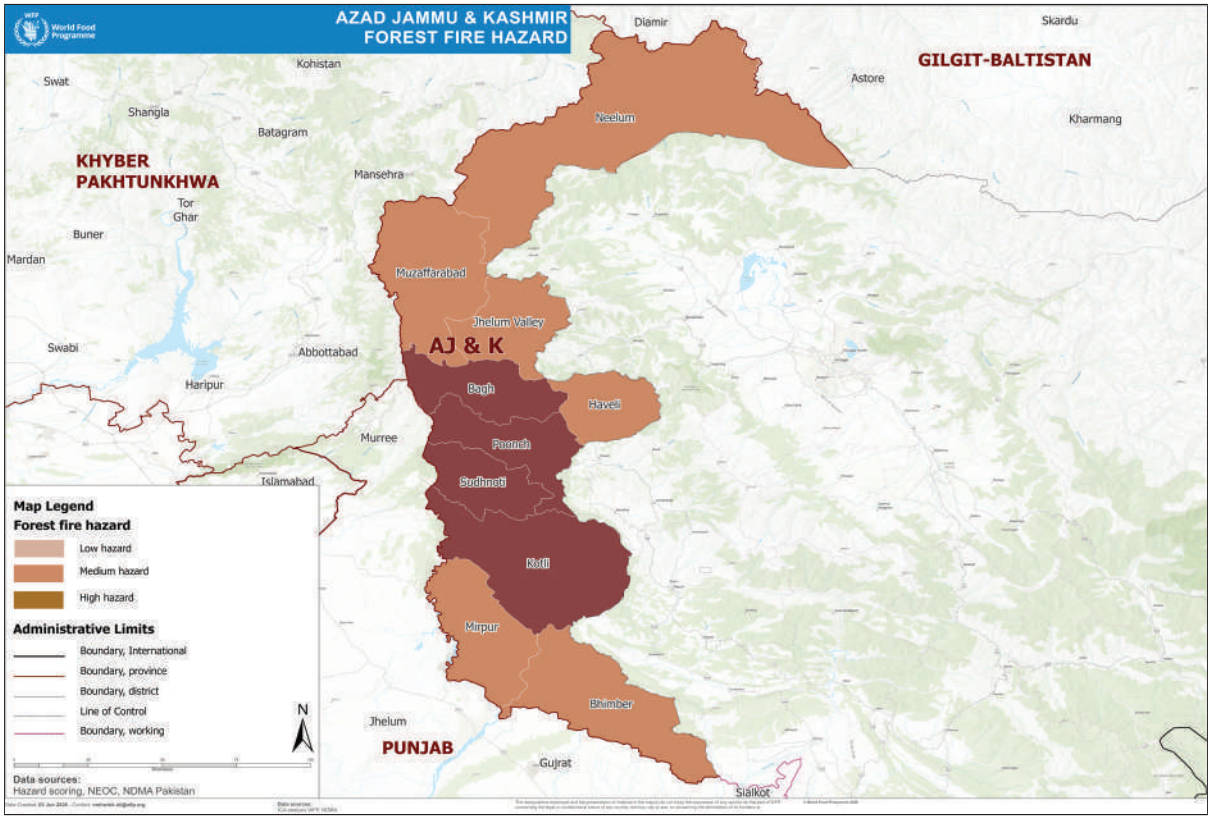


Figure 73: Avalanche hazard AJ&K (Map)

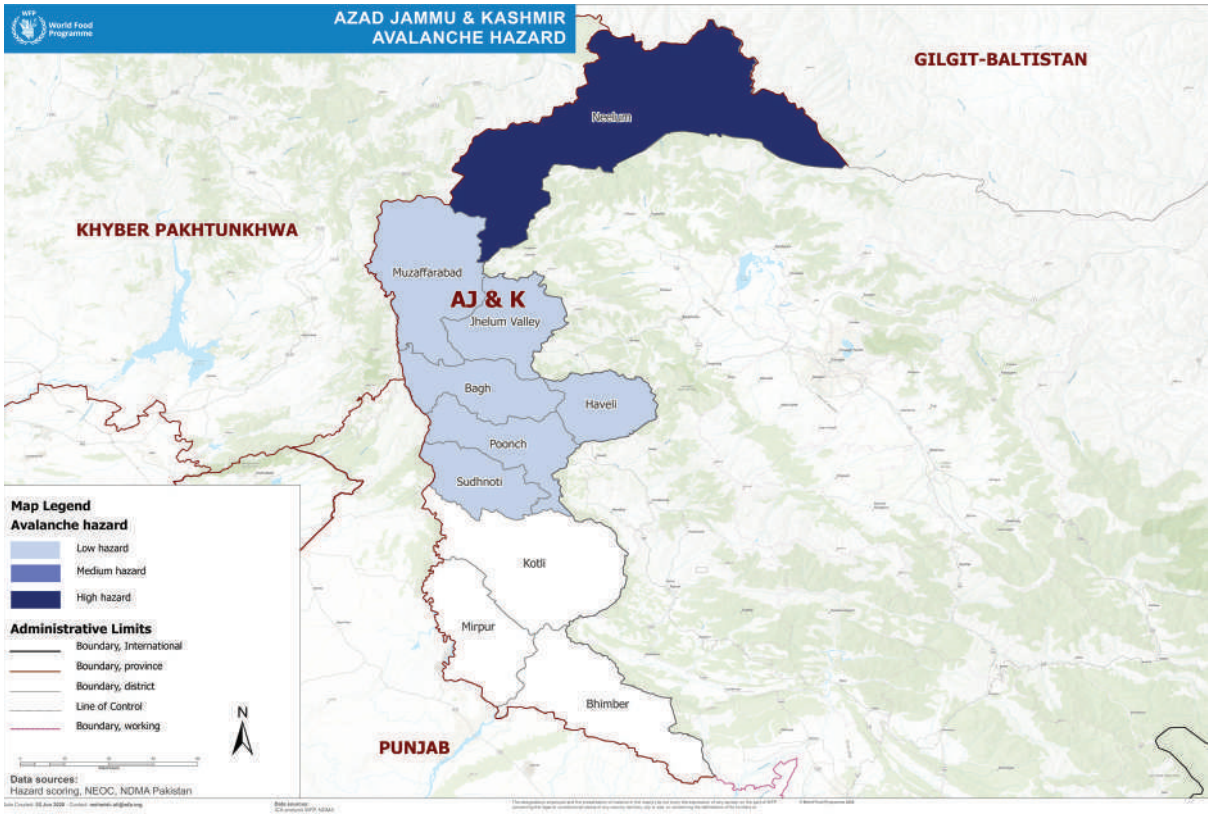


Table 24: ICA data table AJ&K

			Estimated Population vulnerable to Food Insecurity			Food Insecurity	Natural Hazards			ICA Categories		ADDITIONAL LENSES			
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity above threshold	Rain Induced floods risk	Earthquake risk	Combined hazard score	ICA_Areas	ICA Category	Landslide risk	Forest Fire risk	Prevalence of Wasting (NNS)	Prevalence of Stunting (NNS)
1	BAGH	372,000	59,375	39,358	77,605	Medium	Medium	High	High	Area 2A	2	High	Medium	Medium	Very High
2	BHIMBER	421,000	91,612	25,071	126,893	Medium	Low	Medium	Low	Area 3B	3	Medium	Low	Very High	Very High
3	HAVELI	152,000	52,988	38,160	72,482	High	Medium	High	High	Area 1A	1	High	Low	Very High	Very High
4	KOTLI	774,000	131,642	97,331	151,603	Medium	Low	High	Medium	Area 2B	2	High	Medium	Very High	Very High
5	MIRPUR	456,000	58,306	38,281	74,691	Medium	Low	High	Medium	Area 2B	2	High	Low	Medium	Very High
6	MUZAFFARABAD	650,000	165,670	138,710	192,670	High	Medium	High	High	Area 1A	1	High	Low	Very High	Very High
7	NEELUM	191,000	73,959	64,334	80,707	High	Medium	High	High	Area 1A	1	High	Medium	Very High	Very High
8	POONCH	500,000	78,620	46,700	104,980	Medium	Medium	High	High	Area 2A	2	High	Medium	Very High	Very High
9	SUDHNOTI	298,000	49,983	20,428	71,979	Medium	#N/A	High	#N/A	#N/A	2	High	Low	Very High	Very High
10	JHELUM VALLEY	231,000	43,497	31,519	64,911	High	Medium	High	High	Area 1A	1			Very High	Very High
		4,045,000													



6.2.6 Gilgit Baltistan (GB)

For Gilgit Baltistan, **GLOF and flash floods** were identified as the two primary natural hazards. The following maps present the hazard risk for GLOF and flash floods separately, as well as a combined hazard score derived from the two hazards. The combined hazard index is reclassified into low, medium and high risk categories to highlight areas exposed to multiple hazards and support risk-informed planning, disaster preparedness, and resilience-building efforts.

Figure 74: Gilgit Baltistan GLOF hazard (Map)

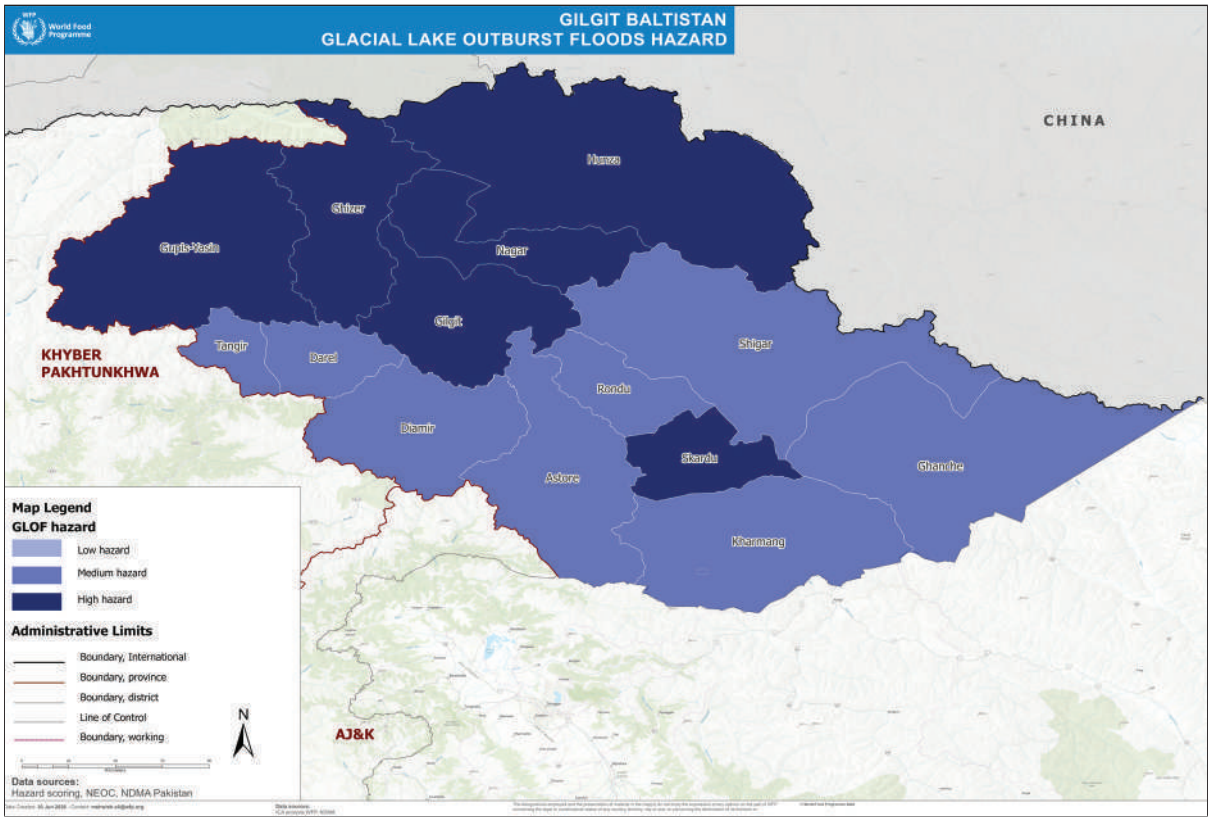


Figure 75: Gilgit Baltistan flash floods hazard (Map)

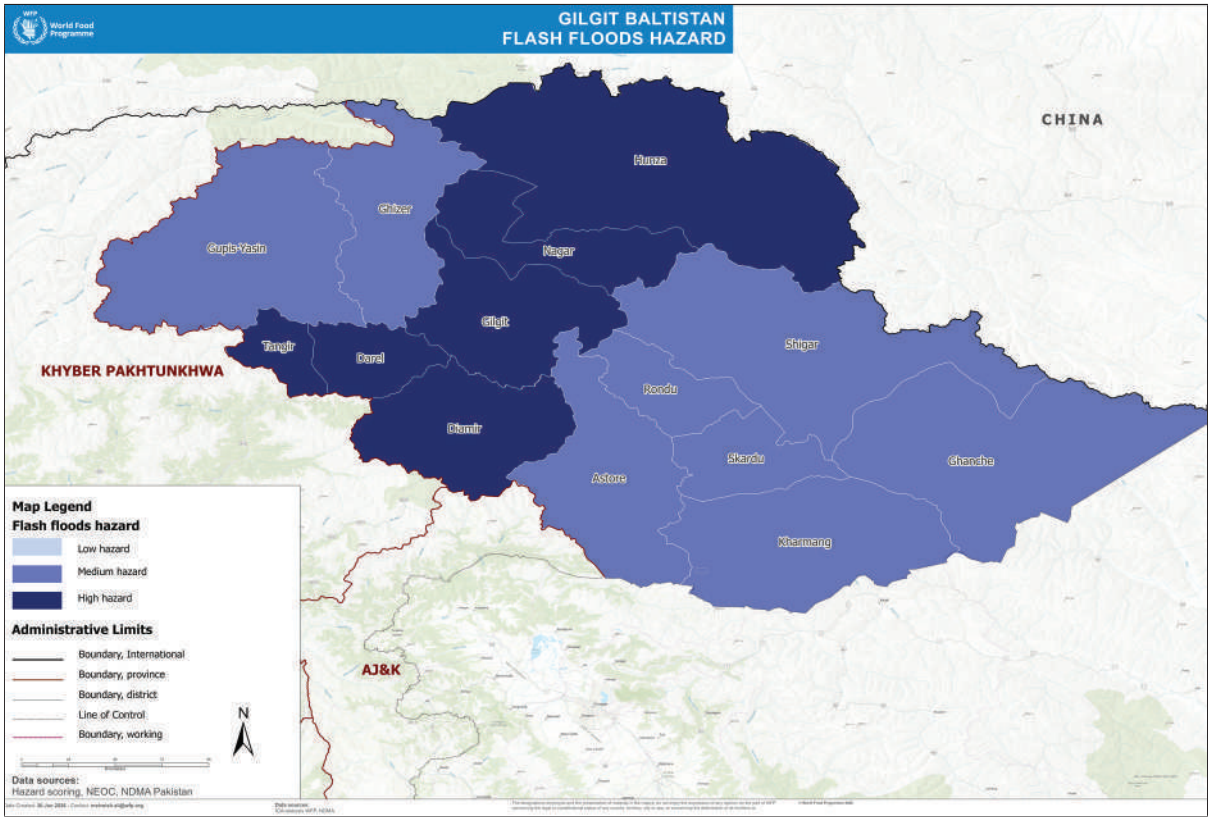
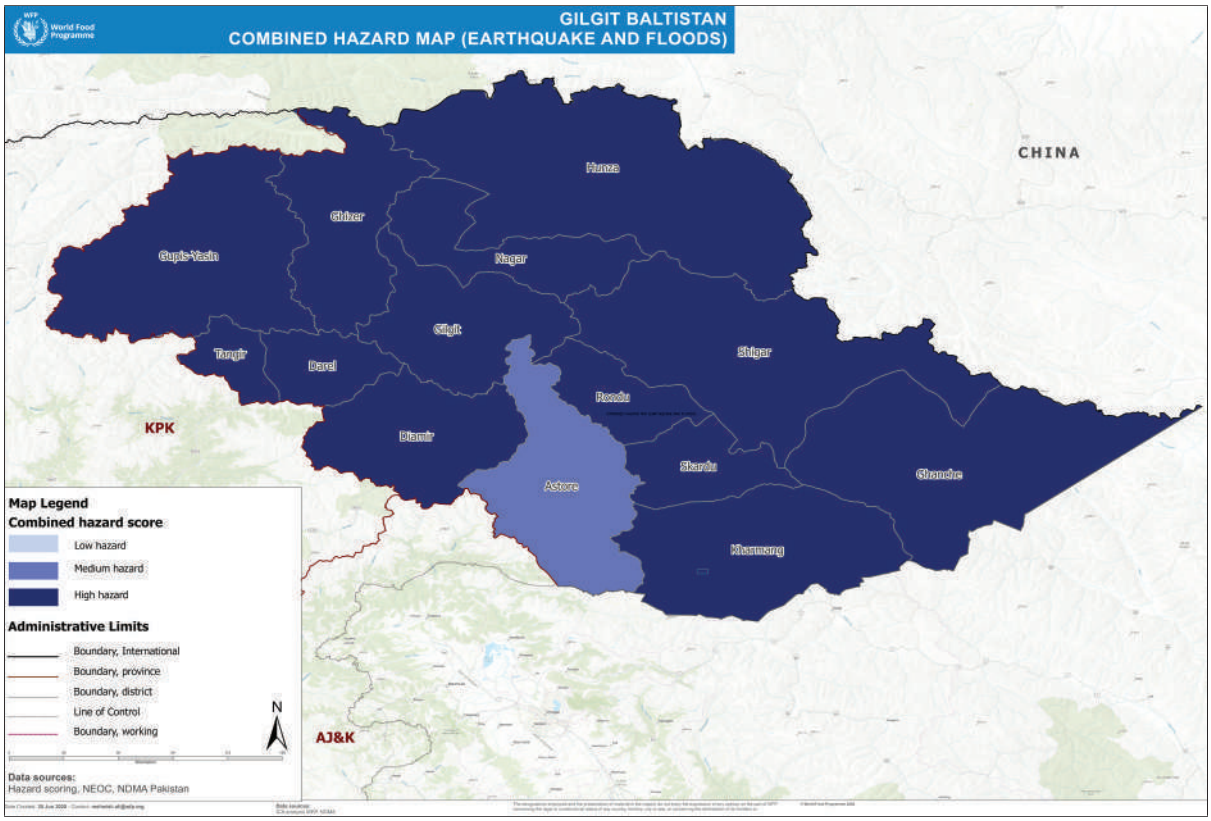


Figure 76: Gilgit Baltistan combined hazard (Map)





Maps for additional hazards affecting Gilgit-Baltistan are presented below. These maps illustrate the spatial distribution of risk associated with individual hazards beyond the primary hazards of Glacial Lake Outburst Floods (GLOFs) and flash floods. Together, they provide a comprehensive understanding of the region's multi-hazard risk profile and support disaster risk reduction, preparedness, and resilience planning.

Figure 77: Gilgit Baltistan earthquake hazard (Map)

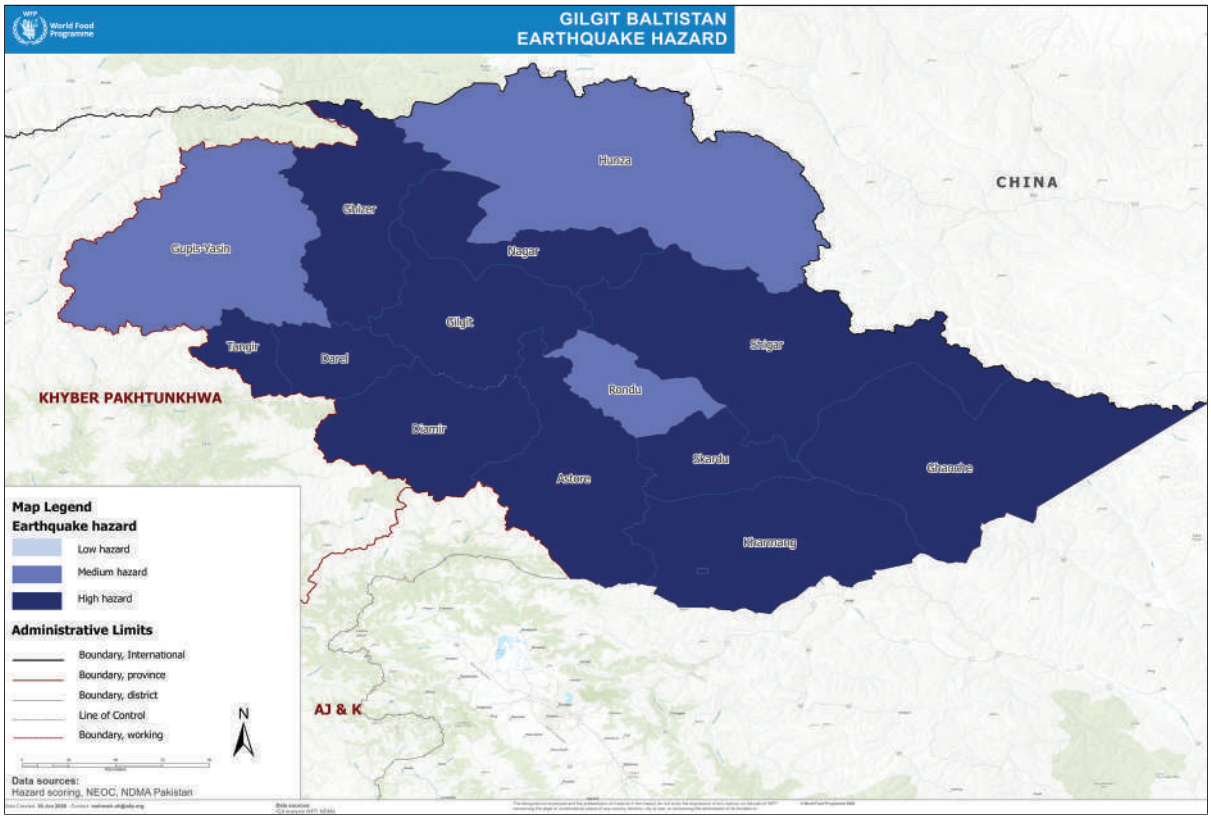


Figure 78: Gilgit Baltistan landslide hazard (Map)

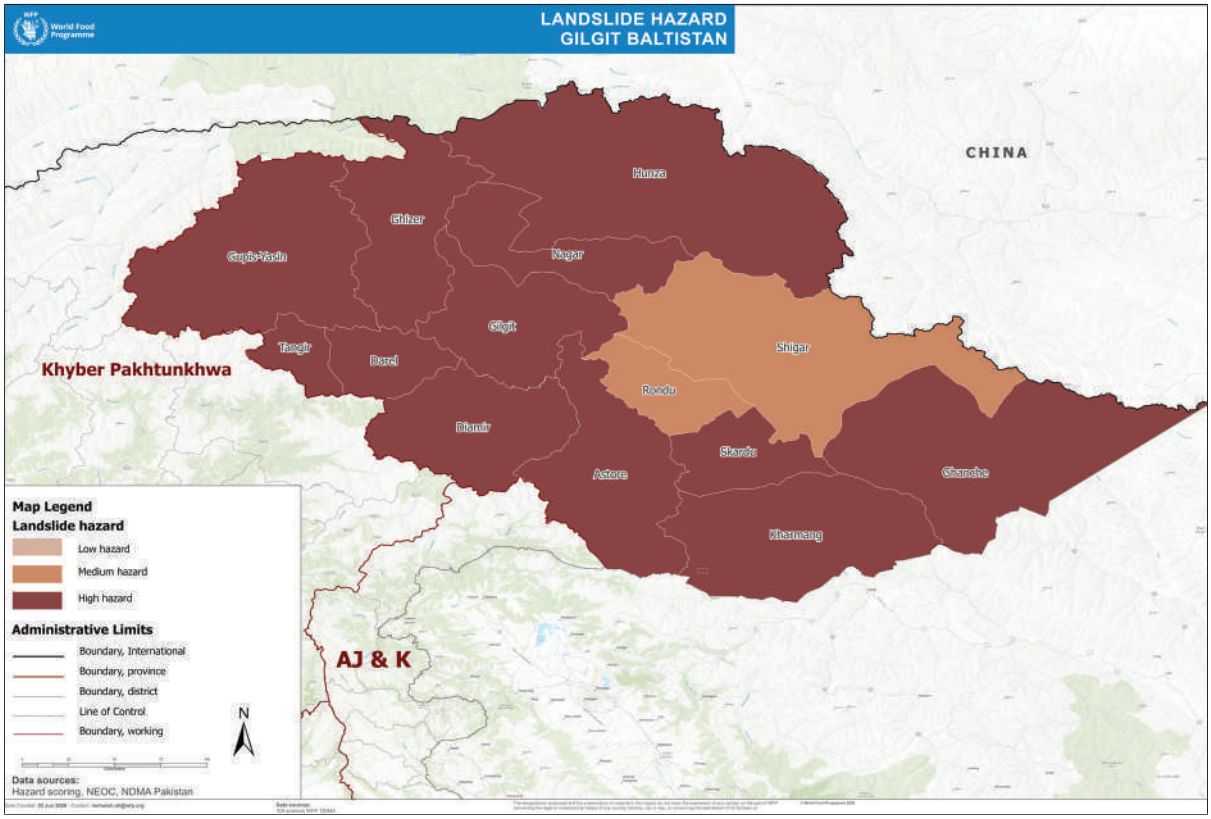


Figure 79: Gilgit Baltistan avalanche hazard (Map)

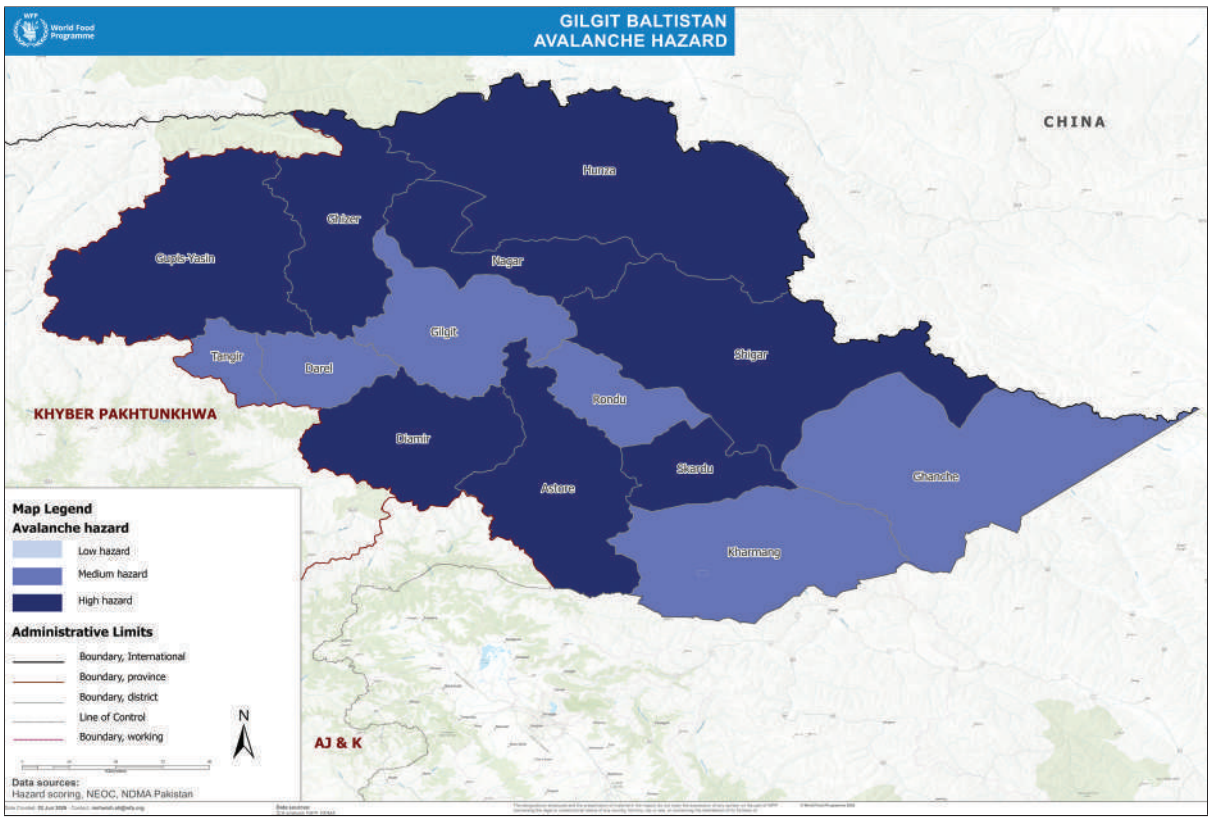


Table 25: ICA data table- Gilgit Baltistan

			Estimated Population Vulnerable to Food Insecurity			Food Insecurity	Natural Hazards			ICA Categories						
No	District name	Population	Long-term planning	Most vulnerable	In case of shock	Classification of recurrence of food insecurity above threshold	Rain Induced/ riverrine floods risk	GLOF risk	Combined hazard score	ICA_Areas	ICA Category	Landslide risk	Earthquake risk	Avalanche risk	Prevalence of Wasting (NNS)	Prevalence of Stunting (NNS)
1	ASTORE	111,000	20,506	11,390	26,862	Low	Medium	Medium	Medium	Area 4B	4	High	Medium	High	Medium	Very High
2	DIAMIR	337,000	86,104	20,978	119,972	Low	High	Medium	High	Area 4A	4	High	Medium	High	-	-
3	GHANCHE	157,000	34,683	26,274	44,591	Medium	High	Medium	High	Area 2A	2	High	Medium	Medium	Very High	Very High
4	GHIZER	199,000	20,700	16,822	22,666	Low	Medium	High	High	Area 4A	4	High	Medium	High	Medium	Very High
5	GILGIT	324,000	42,293	39,042	48,050	Low	High	High	High	Area 4A	4	High	Medium	Medium	Medium	Very High
6	HUNZA	65,400	3,723	2,959	4,931	Low	High	High	High	Area 4A	4	Medium	Low	High	Medium	Medium
7	NAGAR	87,400	15,715	11,917	18,298	Medium	High	High	High	Area 2A	2	High	Medium	High	Medium	Very High
8	KHARMANG	61,300	25,895	15,699	33,565	Medium	High	Medium	High	Area 2A	2	High	Medium	High	Medium	Very High
9	SHIGAR	84,600	33,107	21,036	47,575	Medium	High	Medium	High	Area 2A	2	High	Medium	High	Medium	Very High
10	SKARDU	278,000	-	-	-	-	High	High	High	-	-	High	Medium	High	-	-
11	DAREL	-	-	-	-	-	High	Medium	High	-	-	High	Medium	High	-	-
12	TANGIR	-	-	-	-	-	High	Medium	High	-	-	High	Medium	High	-	-
13	GUPIS-YASIN	-	-	-	-	-	Medium	High	High	-	-	Medium	Low	High	-	-
14	RONDU	-	-	-	-	-	High	Medium	High	-	-	Medium	Low	High	-	-

6.3 FIES Tool

The FIES 12-months household-referenced questions
Q1. During the *last 12 months*, was there a time when you or others in your household were **worried about not having enough food to eat** because of lack of money or other resources?
Q2. Still thinking about the *last 12 months*, was there a time when you or others in your household were **unable to eat healthy and nutritious food** because of lack of money or other resources?
Q3. During the *last 12 months*, was there a time when you or others in your household **ate only a few kinds of foods** because of lack of money or other resources?
Q4. During the *last 12 months*, was there a time when you or others in your household **had to skip a meal** because of lack of money or other resources to get food?
Q5. Still thinking about the *last 12 months*, was there a time when you or others in your household **ate less than you thought you should** because of a lack of money or other resources?
Q6. In the *past 12 months*, was there ever **no food to eat of any kind in your house** because of lack of resources to get food?
Q7. In the *past 12 months*, did you or any household member ever **go to sleep at night hungry** because there was not enough food?
Q8. In the *past 12 months*, did you or any household member ever **go a whole day and night without eating anything at all** because there was not enough food?

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